Service Manual

TOP NEXT

ORDER NO. MKE9901002C1

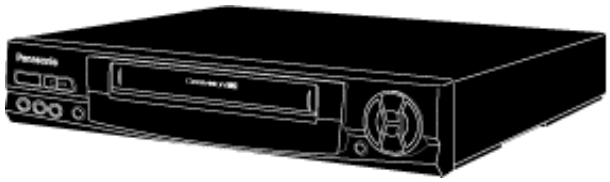
B3

Service Manual

Video Cassette Recorder

Omnivision VHS

- PV-9661/PV-9662



SPECIFICATIONS

ITEM	SPECIFICATION
Power	Source: 120V AC ± 10%, 60 Hz ± 0.5%
	Consumption: Approx. 23 watts (Power on), Approx. 3.3 watts (Power off)
Video	Head: 4 rotary heads helical scanning system
	Input Level: VIDEO IN Jack (Phono type) 1.0 Vp-p 75Ω unbalanced Output Level: VIDEO OUT Jack (Phono type) 1.0 Vp-p 75Ω unbalanced Signal-to-Noise Ratio: SP: more than 43 dB LP/SLP: more than 41 dB Horizontal Resolution: Color/Monochrome: more than 230 lines
Audio	Head: Normal Mono: 1 stationary head Hi-Fi Stereo: 2 rotary heads
	Input Level: AUDIO IN Jack (Phono type) -10 dBv 50kΩ unbalanced Output Level: AUDIO OUT Jack (Phono type) -8 dBv 1kΩ unbalanced
	Frequency Response: Normal Mono: SP: 100 Hz ~ 8 kHz LP: 100 Hz ~ 6 kHz SLP: 100 Hz ~ 5 kHz Hi-Fi Stereo: SP/LP/SLP: 20 Hz ~ 20 kHz
	Signal-to-Noise Ratio: Normal Mono: SP: more than 42 dB LP/SLP: more than 40 dB Hi-Fi Stereo: SP/LP/SLP: more than 60 dB
	Wow and Flutter: Normal Mono: SP: Less than 0.2% WRMS LP: Less than 0.3% WRMS SLP: Less than 0.4% WRMS Hi-Fi Stereo: Less than 0.015% WRMS

ITEM	SPECIFICATION
RF Out	CH 3/CH 4 switchable 72 dBμ (open voltage) 75Ω unbalanced
Tuner	Broadcast Channels: VHF 2 ~ 13, UHF 14 ~ 69 CABLE Channels: Midband A through I (14 ~ 22) Superband J through W (23 ~ 36) Hyperband AA ~ EEE (37 ~ 64) Lowband A-5 ~ A-1 (95 ~ 99) Special CABLE channel 5A (01) Ultraband 65 ~ 94, 100 ~ 125
Video Signal	EIA Standard (525 lines, 60 fields) NTSC Color Signal
Tape Speed	SP: 1-5/16 i.p.s (33.35 mm/sec), LP: 21/32 i.p.s (16.67 mm/sec), SLP: 7/16 i.p.s (11.12 mm/sec) Record/Playback Time: 8 Hrs with 160 min. type tape used in SLP mode FF/REW Time: Less than 3 min. (120 min. type tape)
Tape Format	Tape width 1/2" (12.7 mm) high density tape
Operating Condition	41°F(5°C) ~ 104°F(40°C) (Temperature) 10% ~ 75% (Humidity)
Dimension	16-15/16"(430 mm) (W) X 7-13/16"(198 mm) (H) X 11-13/16"(300 mm) (D)
Weight	9.9 lbs. (4.5 kg)

Weight and dimensions shown are approximate.
Designs ans specifications are subject to change without notice.

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

TOP NEXT

1 SAFETY PRECAUTIONS

TOP PREVIOUS NEXT

GENERAL GUIDELINES

1. IMPORTANT SAFETY NOTICE

   There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Layout, Exploded Views and ReplacementParts List. It is essential that these critical parts should be replaced with manufacturer´s specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

2. An Isolation Transformer should always be used during the servicing of VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personalinjury from electrical shocks. It will also protect VCR from being damaged by accidental shorting that may occur during servicing.

3. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.

4. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.

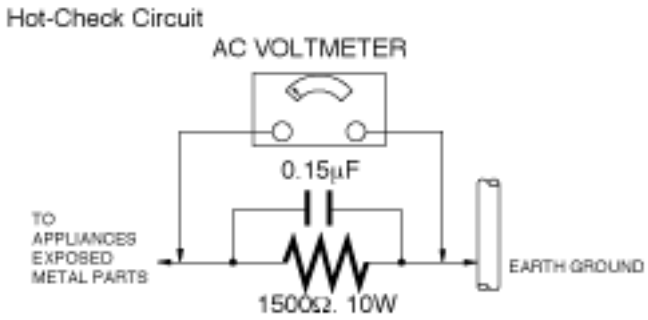
5. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.

2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to thechassis, the reading should be between 1M ohm and 5.2M ohm. When the exposed metal does not have a return path to the chassis, the reading must be infinity.

Figure 1



LEAKAGE CURRENT HOT CHECK

(See figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.

2. Connect a 1.5K ohm, 10 watts resistor, in parallel with a 0.15 microfarad capacitor, between each exposed metallic part on the set and a good earth ground, as shown in figure 1.

3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.

4. Check each exposed metallic part, and measure the voltage at each point.

5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.

6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks. Leakage current must not exceed 1/2 milliamp. In case a measurement is outsideof the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

TOP PREVIOUS NEXT

2 PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

TOP PREVIOUS NEXT

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits, some field-effect transistorsand semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap,which should remove electrostatic charge for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.

3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.

4. Use only an antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate electrical charge sufficient to damage ES devices.

5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.

6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparableconductive material).

7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

   CAUTION:Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD)sufficient to damage an ES device).

"NOTE to CATV system installer:

This reminder is provided to call the CATV system installer´s attention to Article 820-22 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding systemof the building, as close to the point of cable entry as practical."

TOP PREVIOUS NEXT

3 OPERATION GUIDE

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

4 SERVICE NOTES (PLEASE READ)

TOP PREVIOUS NEXT

4.1 SERVICE NOTES

4.1.1 SIMPLIFIED FAULT FINDING DATA

4.1.2 SERVICE POSITION

4.1.2.1 Basic Service Position

4.1.2.1.1 Service Position (1)

4.1.2.1.2 Service Position (2)

4.1.2.2 Service Position with Extension Cable Kit

4.1.2.2.1 Service Position

4.1.2.2.2 Extension Cable Kit (VUZS0002)

4.1.2.2.3 How to place the unit in the Service Position (1)

4.1.3 HOT CIRCUIT

4.1.4 SERVICE MODE

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4.1.6 METHOD FOR LOADING/UNLOADING OF MECHANISM

4.1.7 HOW TO REMOVE A JAMMED TAPE

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4.1.8 DEFEATING THE AUTO TRACKING

4.1.9 HOW TO SET TRACKING TO THE NEUTRAL POSITION

4.1.10 CYLINDER ROTATION IN STOP MODE

4.1.11 BLACK SCREWS ON THE CHASSIS

4.1.12 HOW TO RESET ALL VCR MEMORY FUNCTIONS

4.1.13 VARIABLE VOLTAGE ISOLATION TRANSFORMER

4.1.14 SPECIAL NOTE

4.1.15 REPLACEMENT PROCEDURE FOR LEADLESS (CHIP) COMPONENTS

4.1.16 MODEL NO. IDENTIFICATION MARK

4.2 IC, TRANSISTOR AND CHIP PART INFORMATION

4.2.1 HOW TO READ THE IDENTIFICATION MARK OF CHIP COMPONENTS.

4.2.2 HOW TO READ THE VALUES OF THE CYLINDRICAL TYPE CHIP COMPONENTS.

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4.1 SERVICE NOTES

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4.1.1 SIMPLIFIED FAULT FINDING DATA

4.1.2 SERVICE POSITION

4.1.2.1 Basic Service Position

4.1.2.1.1 Service Position (1)

4.1.2.1.2 Service Position (2)

4.1.2.2 Service Position with Extension Cable Kit

4.1.2.2.1 Service Position

4.1.2.2.2 Extension Cable Kit (VUZS0002)

4.1.2.2.3 How to place the unit in the Service Position (1)

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4.1.7.1.3 Method -3:

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4.1.16 MODEL NO. IDENTIFICATION MARK

TOP PREVIOUS NEXT

4.1.1 SIMPLIFIED FAULT FINDING DATA

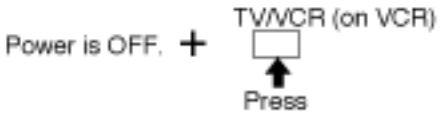
TOP PREVIOUS NEXT

Simplified Self-Diagnostic System facilitates finding the cause of the fault. A 4 digit fault code will be displayed in F.I.P.

The Simplified Fault finding data is memorized for approximately 12 hours. This data is cleared after it is displayed and then, the POWER button is pressed back on.

1. With power turned off, press TV/VCR button on VCR (for over 3 seconds if VCR is not in shut off condition).

Fig. 1-1



2. Fault code (4 digit number) will be displayed in F.I.P. as shown.

Fig. 1-2

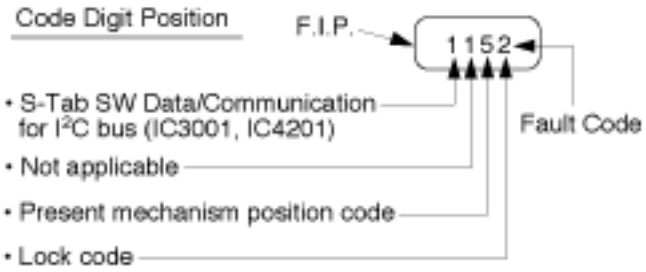


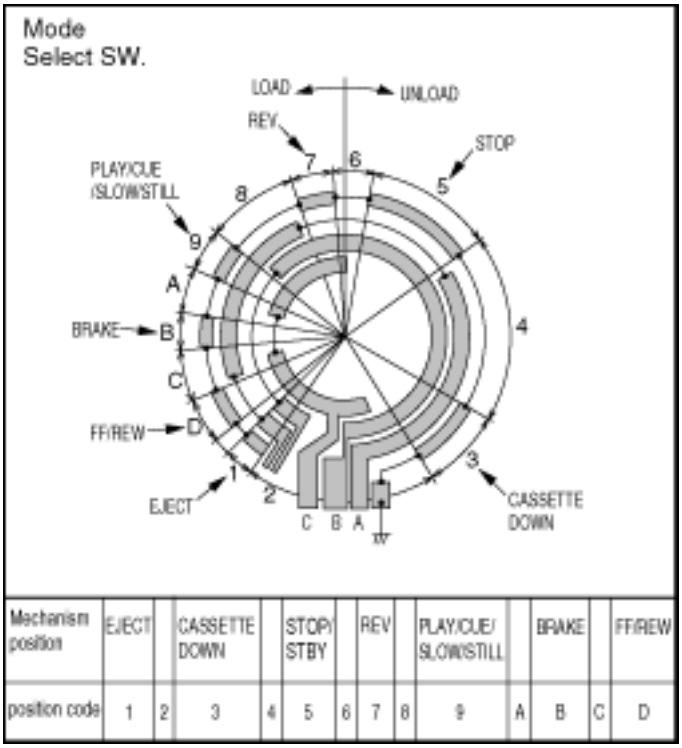
Fig. 1-3

Explanation of Codes	Code No.			
S-Tab SW. Data/Communication check for I²C bus (IC3001, IC 4201) (Refer to Fig. 1-4.)	1 to 8			
Not applicable		–		
Present Mechanism Position Code Mechanism Position is indicated. (Refer to Fig. 1-5.)			1 2 3 4 5 6 7 8 9 A B C D	
Lock Code (See Note 1.) • VCR is not in shut-off condition. • Reel lock. • Cylinder lock. • Exceeds loading/unloading time. (Mechanism Lock) • Exceeds Cassette loading/unloading time. (Cassette Lock) Tape Unloading (direction) Tape Loading (direction)			1 2	0 1 2 3 4 4

Fig. 1-4

S-Tab SW. condition	Communication check for I²C bus (IC6001 ↔ IC3001)	Communication check for I²C bus (IC6001 ↔ IC4201)	Code No.
ON	OK	OK	1
	OK	NG	2
	NG	OK	3
	NG	NG	4
OFF	OK	OK	5
	OK	NG	6
	NG	OK	7
	NG	NG	8

Fig. 1-5

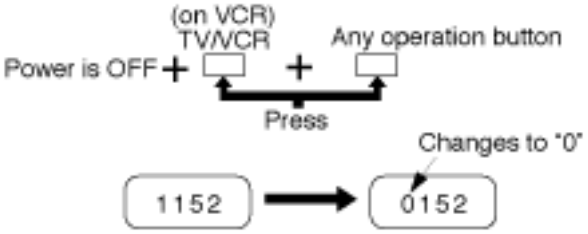


Mechanism position	EJECT		CASSETTE DOWN		STOP/ STBY		REV		PLAY/CUE/ SLOW/STILL		BRAKE		FF/REW
position code	1	2	3	4	5	6	7	8	9	A	B	C	D

3. While pressing down TV/VCR button on VCR with power turned off, press any operation button on either VCR, or remote to detect that a key has been pressed.

   The 1st digit changes to "0" only when key is detected.

Fig. 1-6



Note:

1. When 1 to 4 listed in Lock code occurs, the VCR goes into VCR shut-off condition. VCR stops and all VCR function buttons except for power become non-operational.

TOP PREVIOUS NEXT

4.1.2 SERVICE POSITION

TOP PREVIOUS NEXT

The Basic Service Position does not require the use of Extension Cables. However, for more extensive servicing, Extension Cables should be used.

4.1.2.1 Basic Service Position

4.1.2.1.1 Service Position (1)

4.1.2.1.2 Service Position (2)

4.1.2.2 Service Position with Extension Cable Kit

4.1.2.2.1 Service Position

4.1.2.2.2 Extension Cable Kit (VUZS0002)

4.1.2.2.3 How to place the unit in the Service Position (1)

TOP PREVIOUS NEXT

4.1.2.1 Basic Service Position

TOP PREVIOUS NEXT

Service Position	Purpose
Service Position (1)	Mechanism check Mechanical adjustment Electrical adjustment
Service Position (2)	Main C.B.A. check

4.1.2.1.1 Service Position (1)

4.1.2.1.2 Service Position (2)

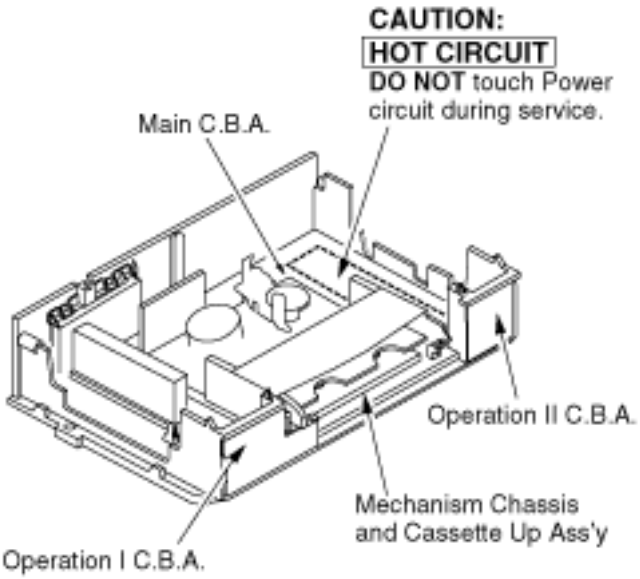
TOP PREVIOUS NEXT

4.1.2.1.1 Service Position (1)

TOP PREVIOUS NEXT

1. Remove Top Cover and Front Panel Ass´y.

Fig. 2-1



TOP PREVIOUS NEXT

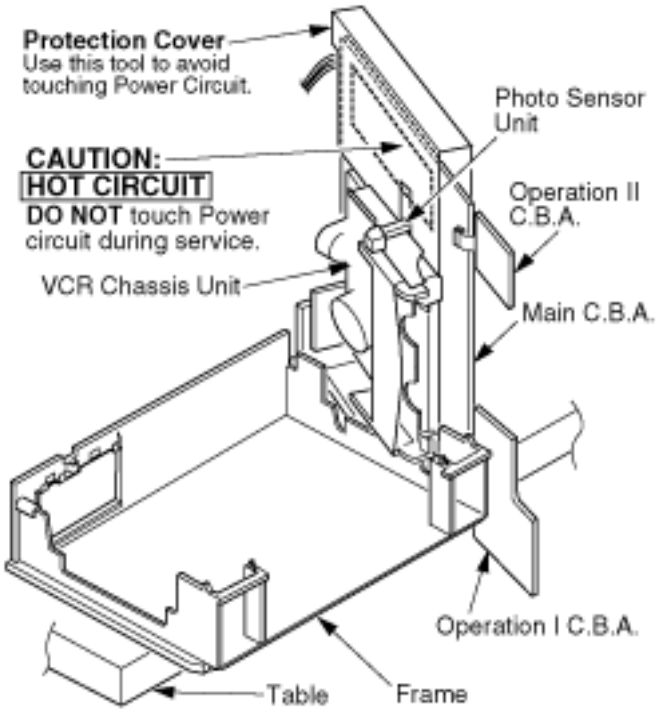
4.1.2.1.2 Service Position (2)

TOP PREVIOUS NEXT

1. Remove Top Cover, Front Panel Ass´y, and Operation I/II C.B.A.s. Then, remove VCR Chassis Unit out of Frame.

2. Place VCR Chassis Unit and Operation I/II C.B.A.s as shown.

Fig. 2-2



CAUTION:

HOT CIRCUIT (Primary circuit) exists on the Main C.B.A.

Use extreme care to prevent accidental shock when servicing.

Note:

When disassembling/assembling, refer to " CABINET SECTION " in Disassembly/Assembly Procedures.

To avoid touching Power Circuit,
following Tool (**Protection Cover**) is recommended.

How to make the Protection Cover:

1. Cut a Cassette Tape Case as shown.

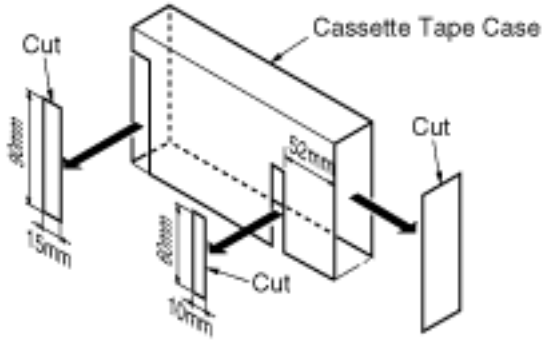


Fig. 2-3

2. Cover the Power Circuit portion on Main C.B.A. with it.

Note:
The Protection Cover is not supplied.

TOP PREVIOUS NEXT

4.1.2.2 Service Position with Extension Cable Kit

TOP PREVIOUS NEXT

4.1.2.2.1 Service Position

4.1.2.2.2 Extension Cable Kit (VUZS0002)

4.1.2.2.3 How to place the unit in the Service Position (1)

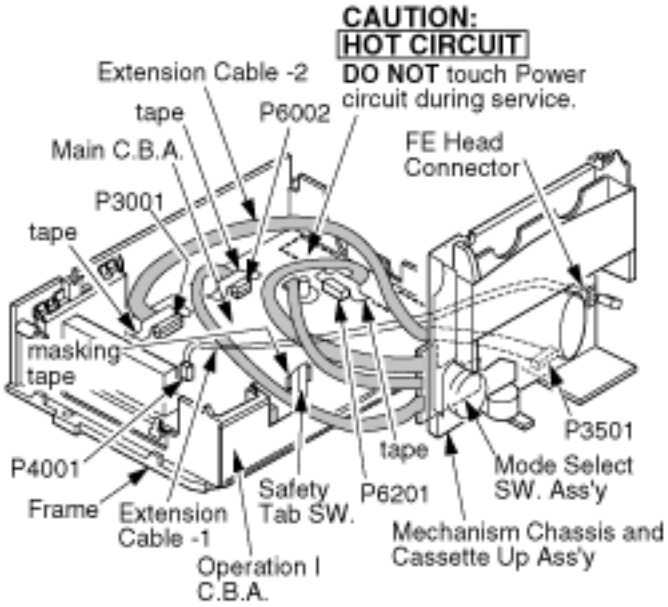
TOP PREVIOUS NEXT

4.1.2.2.1 Service Position

TOP PREVIOUS NEXT

In Service Position (1), mechanism check from the Bottom Side of Mechanism Chassis and Capstan Stator Unit (Capstan Motor Drive, Loading Motor Drive Circuit) check with power on condition can be performed.

Fig. 2-4

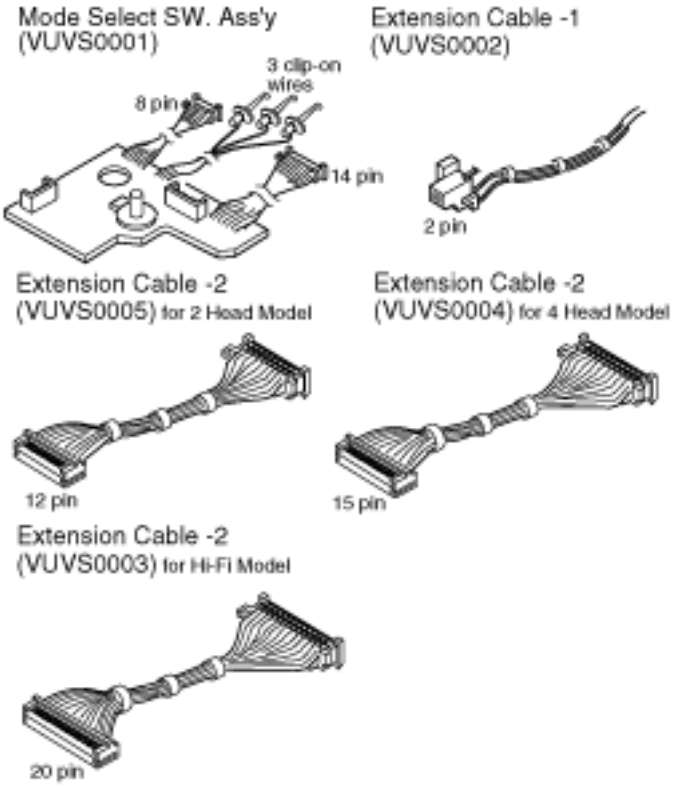


TOP PREVIOUS NEXT

4.1.2.2.2 Extension Cable Kit (VUZS0002)

TOP PREVIOUS NEXT

Fig. 2-5



Note:

3 types of Extension Cable -2 are included in this kit. Since there is a difference in the number of P3501 Head Amp C.B.A. pins between 2 Head, 4 Head, and Hi-Fi models, be sure to use the proper cable.

TOP PREVIOUS NEXT

4.1.2.2.3 How to place the unit in the Service Position (1)

TOP PREVIOUS NEXT

1. Remove Top Cover, Front Panel Ass´y, Mechanism Chassis, and Cassette Up Ass´y.

2. Connect the Extension Cables as follows:

- Extension Cable -1: Full Erase Head Connector on the Mechanism Chassis Unit – P4001 on the Main C.B.A.
  Note: No change in performance if pins are reversed.
- Extension Cable -2: P3501 on the Head Amp C.B.A. – P3001 on the Main C.B.A.
- Mode Select SW. Ass'y: a) 3 Clip-on Wires – Test Points on the Main C.B.A.

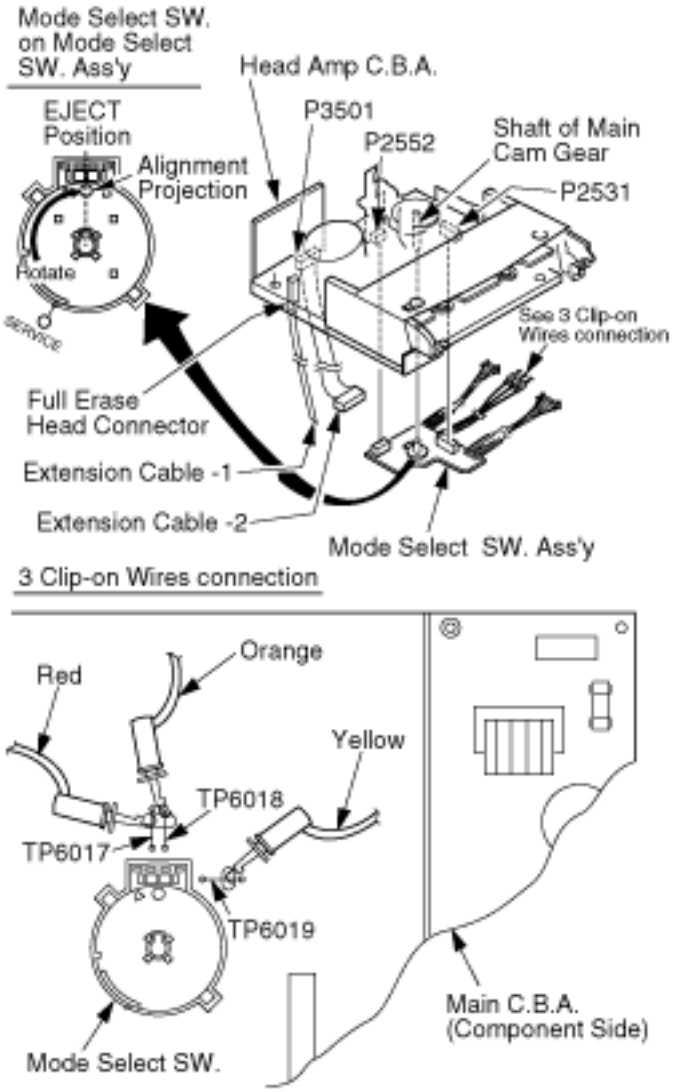
Red Wire	~ TP6017
Orange Wire	~ TP6018
Yellow Wire	~ TP6019

  b) 8 Pin Connector – P6002 on the Main C.B.A.

  c) 14 Pin Connector – P6201 on the Main C.B.A.

  d) Set Mode Select SW. on the Mode Select SW. Ass'y to EJECT position and install onto Mechanism Chassis

Fig. 2-6



3. Place Mechanism Chassis and Cassette Up Ass´y as shown.

4. Secure the Extension Cables with tape as shown. When recording, cover the Safety Tab SW. with masking tape to turn this SW. on.

   Note:

   To avoid damaging the connectors on Main C.B.A., it is necessary to secure connectors with tape as shown.

5. Set Mode Select SW. on the Main C.B.A. to Service Position.

6. Plug the AC plug into an AC outlet.

7. Insert a cassette.

   The power comes on, the tape is fully loaded, and the unit goes into the STOP Mode.

8. Place a jumper between TP6001 and GND to place the unit in Service Mode.

9. Check and/or repair the unit.

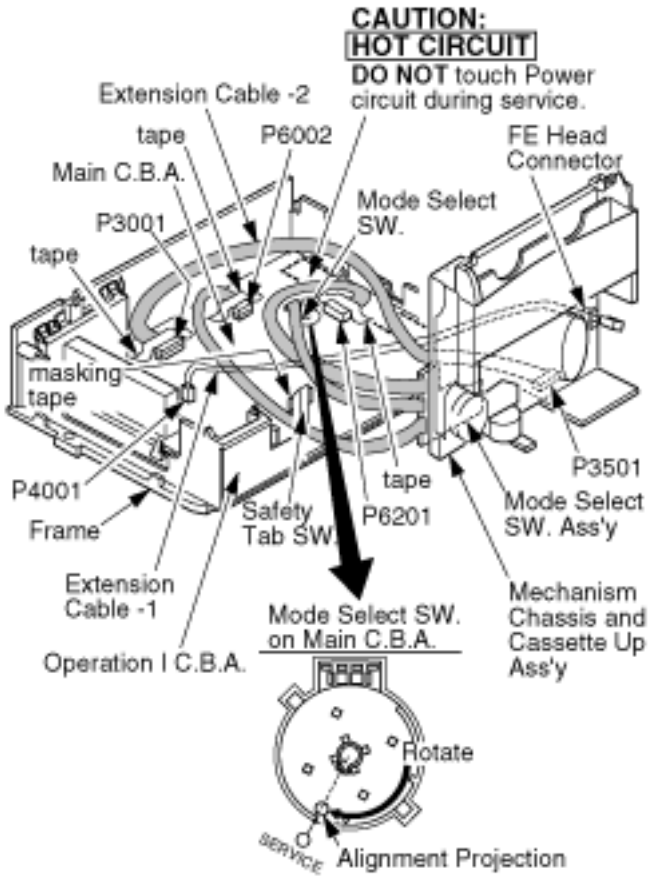
10. Press the STOP/EJECT button to eject the cassette.

    Note:

    When inserting a cassette again, remove the jumper between TP6001 and GND and insert the cassette. Then, reconnect the jumper.

11. After servicing, remove the jumper between TP6001 and GND to release the unit from Service Mode.

Fig. 2-7



CAUTION:

HOT CIRCUIT (Primary circuit) exists on the Main C.B.A. Use extreme care to prevent accidental shock when servicing.

Note:

When disassembling/assembling, "CABINET SECTION" in Disassembly/Assembly Procedures.

TOP PREVIOUS NEXT

4.1.3 HOT CIRCUIT

TOP PREVIOUS NEXT

Primary circuit exists on the Main C.B.A.

This circuit is identified as " HOT " on the C.B.A. and in the Service Manual. Use extreme care to prevent accidental shock when servicing.

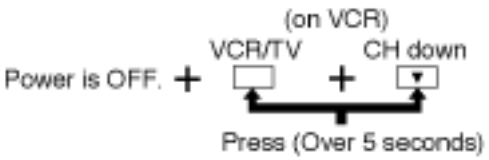
TOP PREVIOUS NEXT

4.1.4 SERVICE MODE

TOP PREVIOUS NEXT

In order to inhibit detection of the Supply & Takeup Photo Transistors, Reel Sensor, and Cylinder Lock, press VCR/TV button and CH down button together on VCR for over 5 seconds in power off condition.

Fig. 3



The power comes on and the unit goes into service mode.

In this mode, Mechanism movement can be confirmed. When removing Cassette Up Ass´y, it can be confirmed without a cassette.

To release from this mode, press POWER button off or disconnect AC Plug.

(Alternative method)

Ground the TP6001.

TOP PREVIOUS NEXT

4.1.5 INSTALLATION OF FRONT PANEL ASS´Y CAUTION

TOP PREVIOUS NEXT

CAUTION:

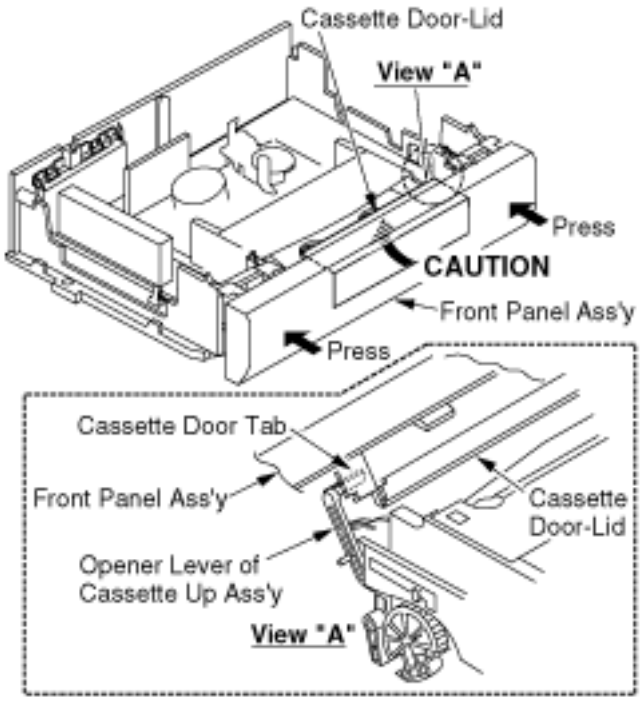
Opener Lever may be damaged when Front Panel Ass´y is installed, with Cassette Door-Lid of Front Panel Ass´y and Opener Lever of Cassette Up Ass´y set incorrectly.

Install the Front Panel Ass´y as follows:

1. Swing the Cassette Door -Lid all the way open until the Cassette Door tab clears the Opener Lever.

2. Make sure that all locking tabs are aligned properly. Then, press the Front Panel straight in.

Fig. 4



TOP PREVIOUS NEXT

4.1.6 METHOD FOR LOADING/UNLOADING OF MECHANISM

TOP PREVIOUS NEXT

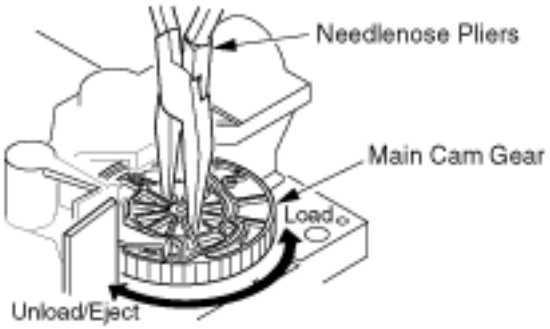
(Manual Method)

Turn the Main Cam Gear counterclockwise (for loading) or clockwise (for unloading) using needlenose pliers etc.

Note:

Do not use this method if Mechanism is jammed or locked.

Fig. 5-1



(Electrical Method)

Remove the solder as shown and apply +10.0 VDC Power Supply (DC + to Portion "a," DC - to Portion "c").

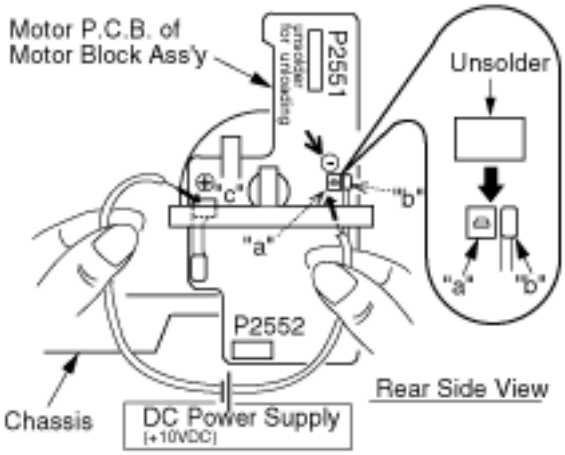
Note:

Be careful not to let the DC Power Supply Unit GND contact the chassis GND. This may damage the Loading Motor Drive IC (IC 2501).

Be sure to apply DC + to Portion "a" of Motor P.C.B.

If DC + is applied to Portion "b", the Loading Motor Drive IC (IC2501) may be damaged.

Fig. 5-2

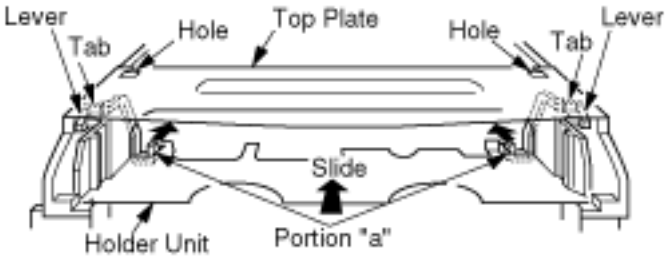


Note:

Do not forget to solder Portions "a" and "b" after loading/unloading operation is completed.

When loading without a cassette , press Portion "a" on both sides of the Holder Unit of Cassette Up Ass´y so that the Levers clear the Tabs and Holes.

Fig. 5-3



TOP PREVIOUS NEXT

4.1.7 HOW TO REMOVE A JAMMED TAPE

TOP PREVIOUS NEXT

CAUTION:

Wiper Arm Unit may be damaged or its spring may be out of place when the jammed tape is removed by force.

Remove a jammed tape as follows:

4.1.7.1 Manual Method

4.1.7.1.1 Method -1:

4.1.7.1.2 Method -2:

4.1.7.1.3 Method -3:

4.1.7.2 Electrical Method

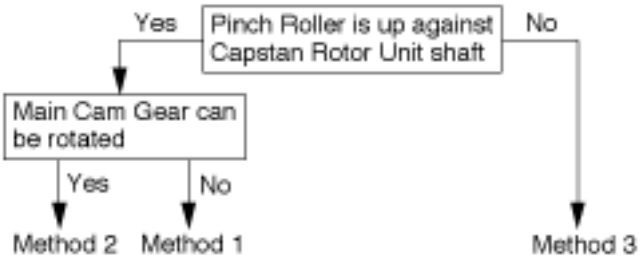
TOP PREVIOUS NEXT

4.1.7.1 Manual Method

TOP PREVIOUS NEXT

When a tape jam is encountered, check the tape loading condition and use the following procedure to remove a tape jam.

Fig. 6-1



4.1.7.1.1 Method -1:

4.1.7.1.2 Method -2:

4.1.7.1.3 Method -3:

TOP PREVIOUS NEXT

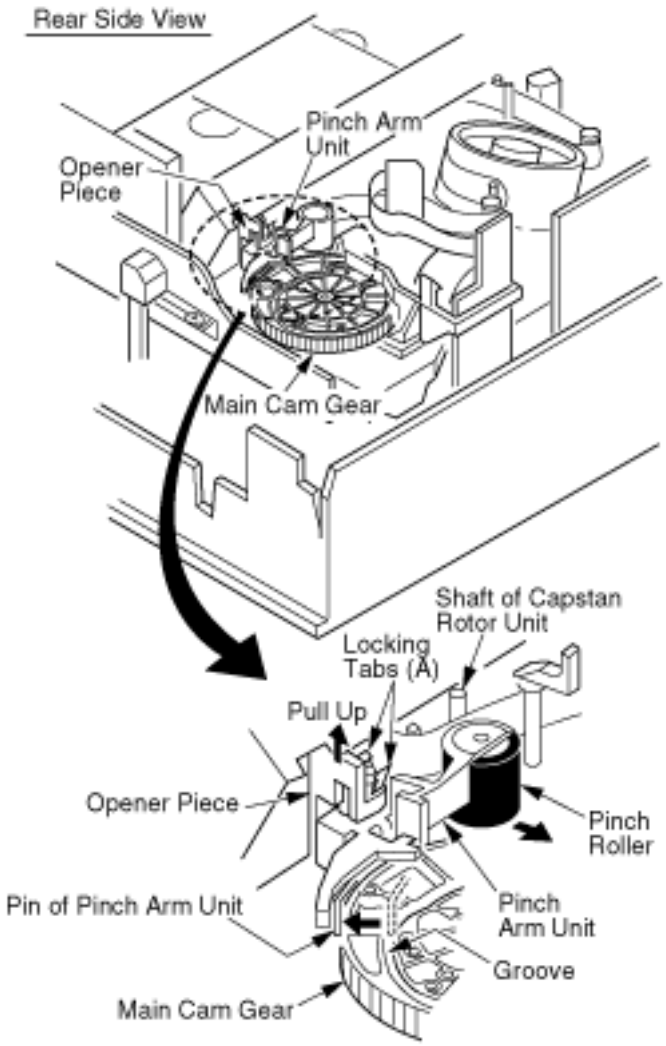
4.1.7.1.1 Method -1:

TOP PREVIOUS NEXT

1. While releasing 2 Locking Tabs (A) of Opener Piece, pull the Opener Piece up as far as you can.

2. Move the pin of Pinch Arm Unit out of the groove of the Main Cam Gear so that the Pinch Roller is separated from the shaft of the Capstan Rotor Unit.

Fig. 6-2



3. Remove the tape from the tape path.

4. Rewind the tape into the cassette by rotating the Center Clutch Unit counterclockwise.

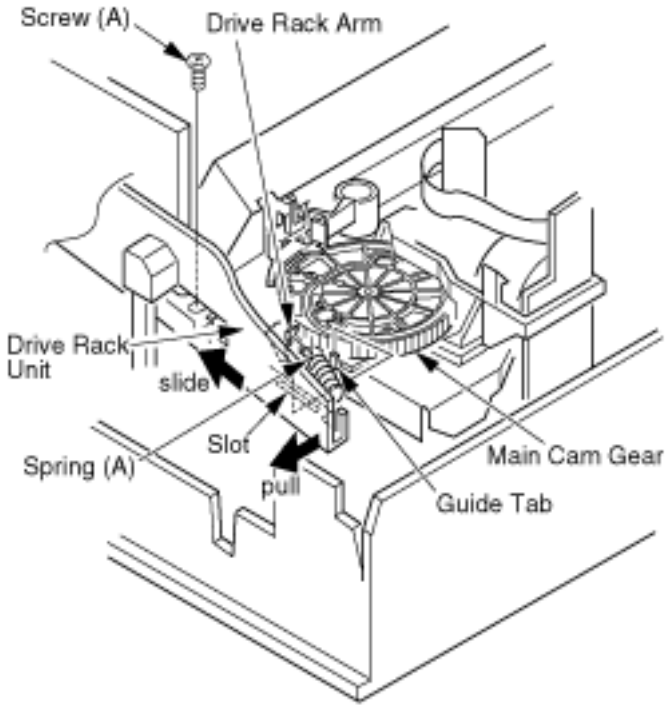
5. Unhook Spring (A) of the Drive Rack Unit.

6. Remove Screw (A).

7. Lift the Drive Rack Unit up so that the slot clears the guide tab. While pulling the Drive Rack Unit out far enough so that it clears the Drive Rack Arm, slide the Drive Rack Unit as indicated by the arrow to remove the cassette tape from theCassette Up Ass´y.

8. Check the cause of mechanical trouble and repair.

Fig. 6-3



TOP PREVIOUS NEXT

4.1.7.1.2 Method -2:

TOP PREVIOUS NEXT

1. Rotate Main Cam Gear clockwise with needlenose pliers, etc. so that the Pinch Roller is separated from the shaft of the Capstan Rotor Unit.

2. Perform Step 3 through Step 8 of Method -1.

TOP PREVIOUS NEXT

4.1.7.1.3 Method -3:

TOP PREVIOUS NEXT

1. Perform Step 3 through Step 8 of Method -1.

Note:

After repairing mechanical trouble, make sure that all gear alignments are correct, especially the Wiper Arm Unit and Drive Rack Unit of Cassette Up Ass´y. (Refer to " EJECT Position Confirmation " inDisassembly/Assembly Procedures of Mechanism.)

TOP PREVIOUS NEXT

4.1.7.2 Electrical Method

TOP PREVIOUS NEXT

Electrical method can only be performed when the mechanism is moved by rotating the Main Cam Gear.

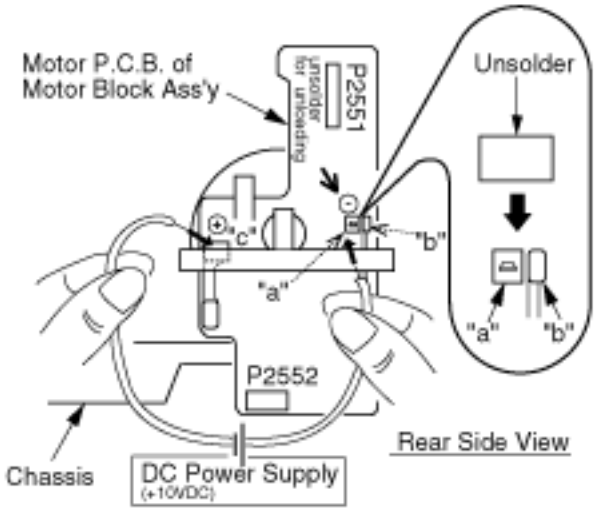
CAUTION:

If loading does not start in approx. 2 seconds after DC Power Supply is applied, DO NOT continue to apply DC Power Supply. Instead, perform "Manual Method."

1. Remove the solder as shown and apply +10.0 VDC Power Supply (DC + to Portion "a," DC - to Portion "c").

2. When the Loading Posts reach the fully unloaded position, remove the Power Supply.

Fig. 7



Note:

Be careful not to let the DC Power Supply Unit GND contact the chassis GND. This may damage the Loading Motor Drive IC (IC 2501).

Be sure to apply DC + to Portion "a" of Motor P.C.B.

If DC + is applied to Portion "b", the Loading Motor Drive IC (IC2501) may be damaged.

3. Rewind the tape into the cassette by turning the Center Clutch Unit counterclockwise.

4. Eject the cassette by applying +10.0VDC Power Supply again.

5. After completing the removal procedure, solder Portion "a" and Portion "b."

TOP PREVIOUS NEXT

4.1.8 DEFEATING THE AUTO TRACKING

TOP PREVIOUS NEXT

To defeat the Auto Tracking Function, place the instrument in the STOP mode and place a jumper between TP6003 and TP6009 on the Main C.B.A. The tracking will be placed in the neutral position.

TOP PREVIOUS NEXT

4.1.9 HOW TO SET TRACKING TO THE NEUTRAL POSITION

TOP PREVIOUS NEXT

Ejecting the cassette tape and then reinserting it will reset the tracking to the Neutral position.

TOP PREVIOUS NEXT

4.1.10 CYLINDER ROTATION IN STOP MODE

TOP PREVIOUS NEXT

The cylinder will continue to rotate for approximately 5 minutes after the STOP button is pressed in Play mode etc. Eject the tape in order to stop the cylinder.

TOP PREVIOUS NEXT

4.1.11 BLACK SCREWS ON THE CHASSIS

TOP PREVIOUS NEXT

Black Screws are used on the Mechanism Chassis to identify screws that require adjustment.

TOP PREVIOUS NEXT

4.1.12 HOW TO RESET ALL VCR MEMORY FUNCTIONS

TOP PREVIOUS NEXT

To reset (clear) the select language, channel auto set and set clock functions to their initial power on condition (power on, no cassette inserted), hold down the PLAY and CH UP buttons on the unit together for more than 5 seconds. Power will shutoff.

TOP PREVIOUS NEXT

4.1.13 VARIABLE VOLTAGE ISOLATION TRANSFORMER

TOP PREVIOUS NEXT

An Isolation Transformer should always be used during the servicing of VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury fromelectrical shocks. It will also protect VCR from being damaged by accidental shorting that may occur during servicing.

Also, when troubleshooting the above type of Power Supply Circuit, a variable isolation transformer is required in order to increase the input voltage slowly.

TOP PREVIOUS NEXT

4.1.14 SPECIAL NOTE

TOP PREVIOUS NEXT

All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques.

TOP PREVIOUS NEXT

4.1.15 REPLACEMENT PROCEDURE FOR LEADLESS (CHIP) COMPONENTS

TOP PREVIOUS NEXT

The following procedures are recommended for the replacement of the leadless components used in this unit.

1. Preparation for replacement

   A. Soldering Iron

      Use a pencil-type soldering iron that uses less than 30 watts.

   B. Solder

      Eutectic Solder (Tin 63%, Lead 37%) is recommended.

   C. Soldering time

      Do not apply heat for more than 4 seconds.

   D. Preheating

      Leadless capacitor must be preheated before installation. -(266°F ~ 302°F)

      (130°C ~150°C) for about two minutes.

   Note:

   a. Leadless components must not be reused after removal.

   b. Excessive mechanical stress and rubbing of the component electrode must be avoided.

2. Removing the leadless component

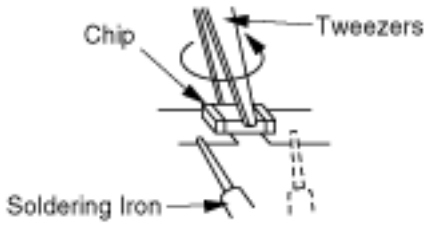
   Grasp the leadless component body with tweezers and alternately apply heat to both electrodes. When the solder on both electrodes is melted, remove the leadless component with a twisting motion.

   Note:

a. Do not attempt to lift the component off the board until the component is completely disconnected from the board by a twisting action.

b. Be careful not to break the copper foil on the printed circuit board.

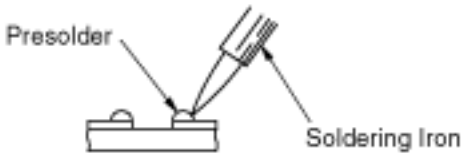
Fig. 8-1



3. Installing the leadless component

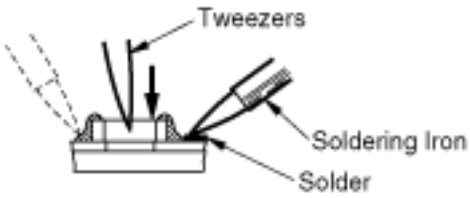
   A. Presolder the contact points on the circuit board.

Fig. 8-2



4. Press the part downward with tweezers and solder both electrodes as shown below.

Fig. 8-3



Note:

Do not glue the replacement leadless component to the circuit board.

TOP PREVIOUS NEXT

4.1.16 MODEL NO. IDENTIFICATION MARK

TOP PREVIOUS NEXT

Use Marks shown in the chart below to distinguish the different models included in this Service Manual.

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z

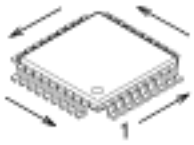
Note:
Refer to Item 3 of Schematic Diagram Notes of Schematic Diagram and Circuit Board Layout Notes, for mark "Z."

TOP PREVIOUS NEXT

4.2 IC, TRANSISTOR AND CHIP PART INFORMATION

TOP PREVIOUS NEXT

MAIN C.B.A.



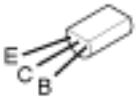
AN3479FBP,
MN101D02FPF,
AN3662FBP,
MN101D02GPH,
MN101D02HPK,
T47C216FF917

2SC5130LF608,
2SC4533LP.KT, 2SD2375,
2SD2396, 2SC3852

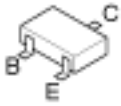
ON3131-S.KT,
ON3131-R.KT,
PS2501-1-X

2SD2259,
2SD1458

T4101,
EIQ7QF018Q

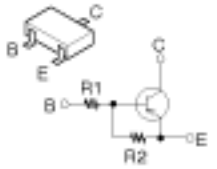


2SD2159

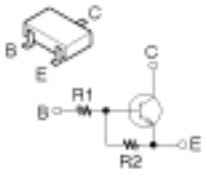


2SD601, 2SB709A, 2SD1819A, 2SC4081T106R,
2SC2412K1, 2SA1037K146R, 2SB1218ARS,
2SA1576A106R, 2SD2097TV2R, 2SD235800A

2SD1581



UN211L (R1=4.7K, R2=4.7K),
UN511L (R1=4.7K, R2=4.7K),
UN2115 (R1=10K, R2=OPEN),
UN5115 (R1=10K, R2=OPEN),
DTA114TK (R1=10K, R2=OPEN),
DTA114TU (R1=10K, R2=OPEN),
DTA143EK (R1=4.7K, R2=4.7K),
DTA143EU (R1=4.7K, R2=4.7K)



UN2215 (R1=10K, R2=OPEN),
UN5215 (R1=10K, R2=OPEN),
DTC114TK (R1=10K, R2=OPEN),
DTC114TU (R1=10K, R2=OPEN)

GENERAL C.B.A./ASS'Y PARTS

MN3885S, AN3361SB,
AN3328S, AN3845SC,
AN3809K,AN3371SB,
AN3362FBP, MN12511,
UPD4053BG, AN3275SB

4.2.1 HOW TO READ THE IDENTIFICATION MARK OF CHIP COMPONENTS.

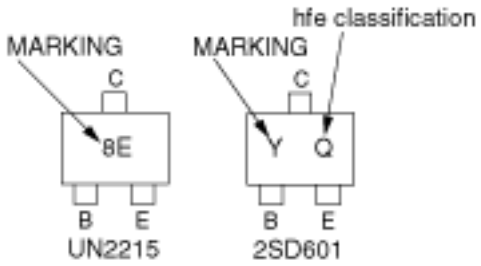
4.2.2 HOW TO READ THE VALUES OF THE CYLINDRICAL TYPE CHIP COMPONENTS.

TOP PREVIOUS NEXT

4.2.1 HOW TO READ THE IDENTIFICATION MARK OF CHIP COMPONENTS.

TOP PREVIOUS NEXT

MARKING	PART NO.	MARKING	PART NO.
B	2SB709A	13	DTA143EK
B	2SC4081T106R	94	DTA114TK
B	2SB1218ARS	6E	UN2115
F	2SA1037K146R	6E	UN5115
F	2SA1576A106R	6Q	UN211L
Y	2SD601	6Q	UN511L
Z	2SD1819A	8E	UN2215
04	DTC114TK	8E	UN5215



TOP PREVIOUS NEXT

4.2.2 HOW TO READ THE VALUES OF THE CYLINDRICAL TYPE CHIP COMPONENTS.

TOP PREVIOUS NEXT

The widest color band must be read first for value.

1. RESISTOR

   There are two types (ERD10LLJ... and ERD10TLJ...) of chip parts.

   A. ERD10LLJ : Refer to above type.

   B. ERD10TLJ : The narrow color band must be read first for value.

   If this part is included in the parts list, be sure that the color band is read properly when servicing.

2. CAPACITOR

   Because of the width of the color bands, the reading direction cannot be specified. However, the color band can be read on either side. Be sure to confirm the value using the schematic diagram.

   CAUTION :

   Once chip parts are removed, they must not be reused.

   Always use a new part when installing a chip part.

TOP PREVIOUS NEXT

5 DISASSEMBLY/ASSEMBLY PROCEDURES

TOP PREVIOUS NEXT

5.1 CABINET SECTION

5.1.1 Disassembly Flowchart

5.1.2 Top Cover

5.1.2.1 Disassembly Procedure

5.1.2.2 Reassembly Notes

5.1.3 Bottom Panel

5.1.3.1 Disassembly Procedure

5.1.4 Front Panel Ass´y

5.1.4.1 Disassembly Procedure

5.1.4.2 Reassembly Notes

5.1.5 Operation C.B.A.

5.1.5.1 Disassembly Procedure

5.1.6 VCR Chassis Unit

5.1.6.1 Disassembly Procedure

5.1.6.2 Reassembly Notes

5.1.7 Main C.B.A.

5.1.7.1 Disassembly Procedure

5.1.7.2 Reassembly Notes

5.1.8 Cassette Up Ass´y

5.1.8.1 Disassembly Procedure

5.1.8.2 Reassembly Notes

5.2 MECHANISM SECTION

5.2.1 Disassembly Method

5.2.2 EJECT Position Confirmation

5.2.3 Cylinder Unit

5.2.3.1 Disassembly Procedure

5.2.3.2 Reassembly Notes

5.2.4 Upper Cylinder Unit

5.2.4.1 Disassembly Procedure

5.2.4.2 Reassembly Notes

5.2.5 Opener Piece, Pinch Arm Unit, Motor Block Ass´y, Audio Control Head Unit, and Cleaner Arm Unit

5.2.5.1 Disassembly Procedure

5.2.5.2 Reassembly Notes

5.2.6 Main Cam Gear and Drive Rack Arm

5.2.6.1 Disassembly Procedure

5.2.6.2 Reassembly Notes

5.2.7 Main Lever

5.2.7.1 Disassembly Procedure

5.2.7.2 Reassembly Notes

5.2.8 P5 Arm Unit and Main Lever Drive Arm

5.2.8.1 Disassembly Procedure

5.2.8.2 Reassembly Notes

5.2.9 T Brake Unit, Changing Lever A, and T Reel Table

5.2.9.1 Disassembly Procedure

5.2.9.2 Reassembly Notes

5.2.10 Full Erase Head, Tension Arm Unit, S Spring Arm, and S Reel Table

5.2.10.1 Disassembly Procedure

5.2.10.2 Reassembly Notes

5.2.11 S Brake Arm Unit, Main Lever Guide, Loading Post Base -S, and Loading Post Base -T Unit

5.2.11.1 Disassembly Procedure

5.2.11.2 Reassembly Notes

5.2.12 Capstan Rotor Unit, Capstan Holder Unit, and SS Brake Arm Unit

5.2.12.1 Disassembly Procedure

5.2.12.2 Reassembly Notes

5.2.13 Junction C.B.A., Capstan Stator Unit, Sub Rotor, and PCB Holder

5.2.13.1 Disassembly Procedure

5.2.13.2 Reassembly Notes

5.2.14 T Loading Arm Unit and S Loading Arm Unit

5.2.14.1 Disassembly Procedure

5.2.14.2 Reassembly Notes

5.2.15 Center Clutch Unit, Changing Gear Spring, Changing Gear, Changing Lever-B, and Idler Arm Unit

5.2.15.1 Disassembly Procedure

5.2.15.2 Reassembly Notes

5.2.16 Loading Rack Unit

5.2.16.1 Disassembly Procedure

5.2.16.2 Reassembly Notes

5.3 DISASSEMBLY/ASSEMBLY PROCEDURES OF CASSETTE UP COMPARTMENT SECTION

5.3.1 Top Plate, Wiper Arm Unit, and Holder Unit

5.3.1.1 Disassembly Procedure

5.3.1.2 Reassembly Notes

5.3.2 Sensor Cover, Opener Lever, and Drive Rack Unit

5.3.2.1 Disassembly Procedure

TOP PREVIOUS NEXT

5.1 CABINET SECTION

TOP PREVIOUS NEXT

5.1.1 Disassembly Flowchart

5.1.2 Top Cover

5.1.2.1 Disassembly Procedure

5.1.2.2 Reassembly Notes

5.1.3 Bottom Panel

5.1.3.1 Disassembly Procedure

5.1.4 Front Panel Ass´y

5.1.4.1 Disassembly Procedure

5.1.4.2 Reassembly Notes

5.1.5 Operation C.B.A.

5.1.5.1 Disassembly Procedure

5.1.6 VCR Chassis Unit

5.1.6.1 Disassembly Procedure

5.1.6.2 Reassembly Notes

5.1.7 Main C.B.A.

5.1.7.1 Disassembly Procedure

5.1.7.2 Reassembly Notes

5.1.8 Cassette Up Ass´y

5.1.8.1 Disassembly Procedure

5.1.8.2 Reassembly Notes

TOP PREVIOUS NEXT

5.1.1 Disassembly Flowchart

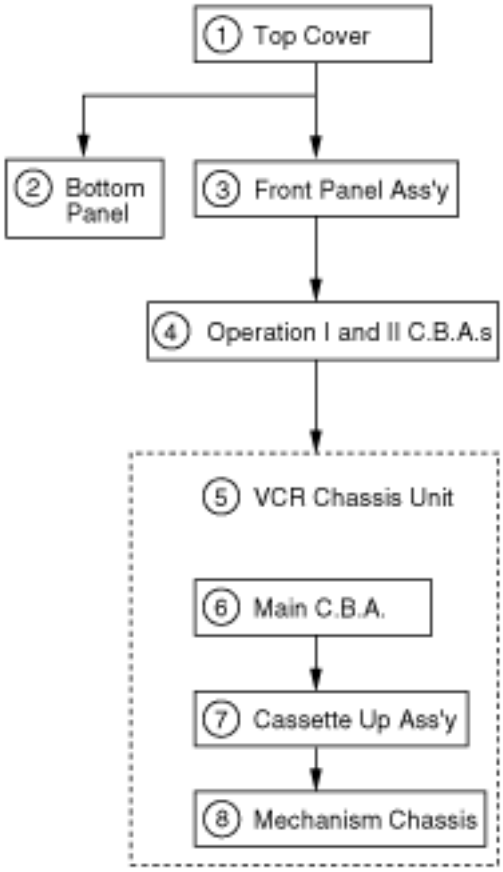
TOP PREVIOUS NEXT

Perform all disassembly procedures in the order described in the "Disassembly Flowchart" shown below. When reassembling, use the reverse procedure.

CAUTION:

Disconnect AC plug before disassembly.

Fig. D1



TOP PREVIOUS NEXT

5.1.2 Top Cover

TOP PREVIOUS NEXT

5.1.2.1 Disassembly Procedure

5.1.2.2 Reassembly Notes

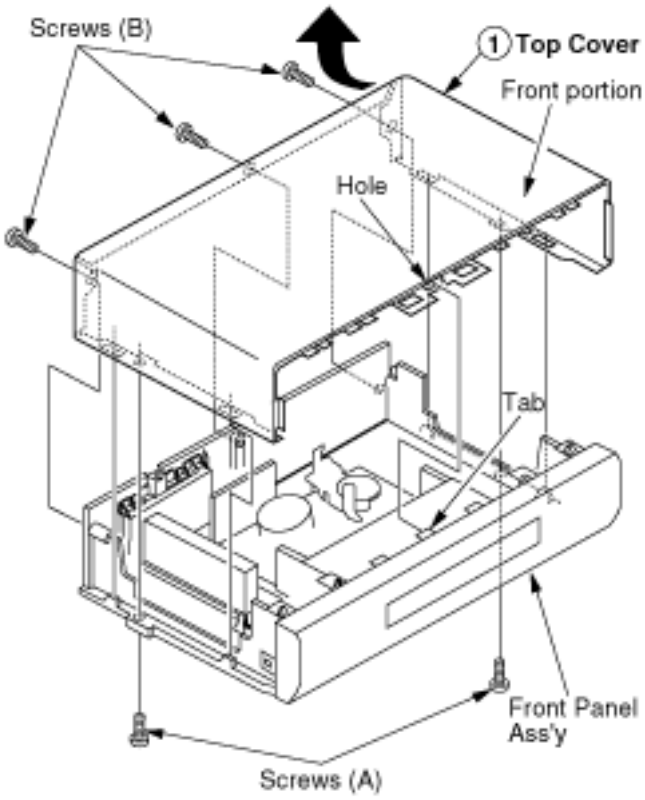
TOP PREVIOUS NEXT

5.1.2.1 Disassembly Procedure

TOP PREVIOUS NEXT

1. Remove 2 Screws (A) and 3 Screws (B).
2. Lift up on the rear portion of the Top Cover and remove.

Fig. D2



TOP PREVIOUS NEXT

5.1.2.2 Reassembly Notes

TOP PREVIOUS NEXT

Install the Top Cover front portion at a downward angle so that the tab on the Front Panel Ass´y fits into the hole in the Top Cover.

Then, lower the rear portion into place and tighten 2 Screws (A) and 3 Screws (B).

TOP PREVIOUS NEXT

5.1.3 Bottom Panel

TOP PREVIOUS NEXT

5.1.3.1 Disassembly Procedure

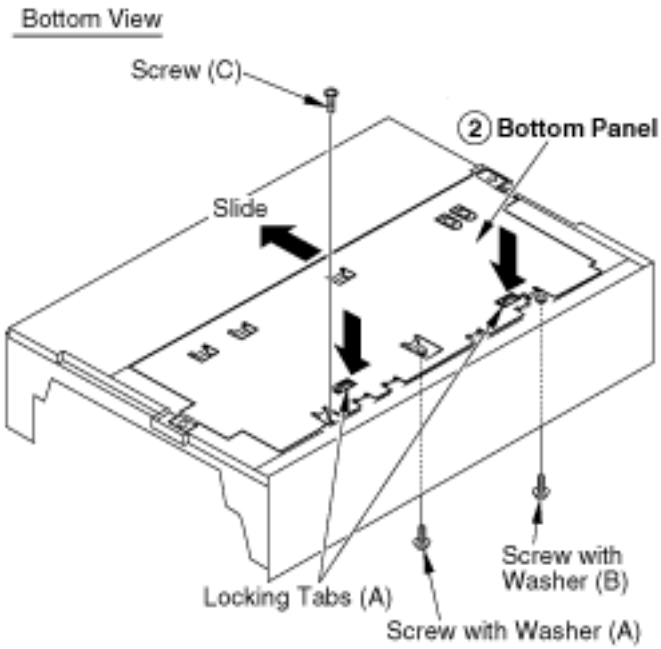
TOP PREVIOUS NEXT

5.1.3.1 Disassembly Procedure

TOP PREVIOUS NEXT

1. Remove 2 Screws with Washers (A), (B), and Screw (C).
2. While pushing 2 Locking Tabs (A) to release, slide the Bottom Panel and remove.

Fig. D3



TOP PREVIOUS NEXT

5.1.4 Front Panel Ass´y

TOP PREVIOUS NEXT

5.1.4.1 Disassembly Procedure

5.1.4.2 Reassembly Notes

TOP PREVIOUS NEXT

5.1.4.1 Disassembly Procedure

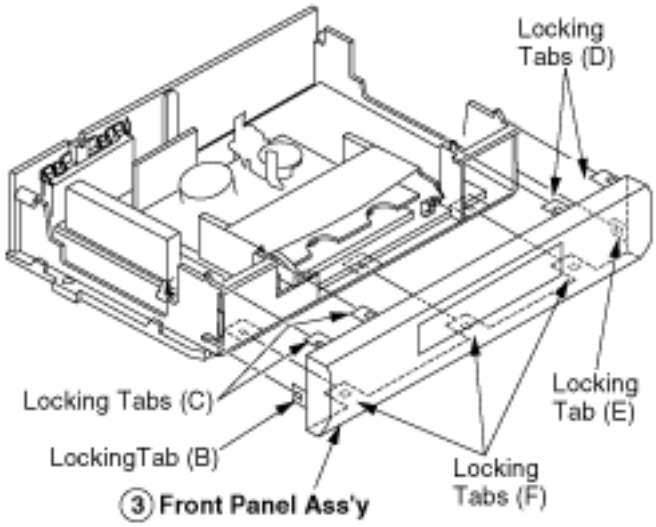
TOP PREVIOUS NEXT

1. Release Locking Tab (B) on the left side.
2. Release 2 Locking Tabs (C) on the top left.
3. Release 2 Locking Tabs (D) on the top right.
4. Release Locking Tab (E) on the right side.
5. Release 3 Locking Tabs (F) on the bottom side. Then, remove the Front Panel Ass´y.

Note:

Work carefully so as not to break the Tabs.

Fig. D4-1



TOP PREVIOUS NEXT

5.1.4.2 Reassembly Notes

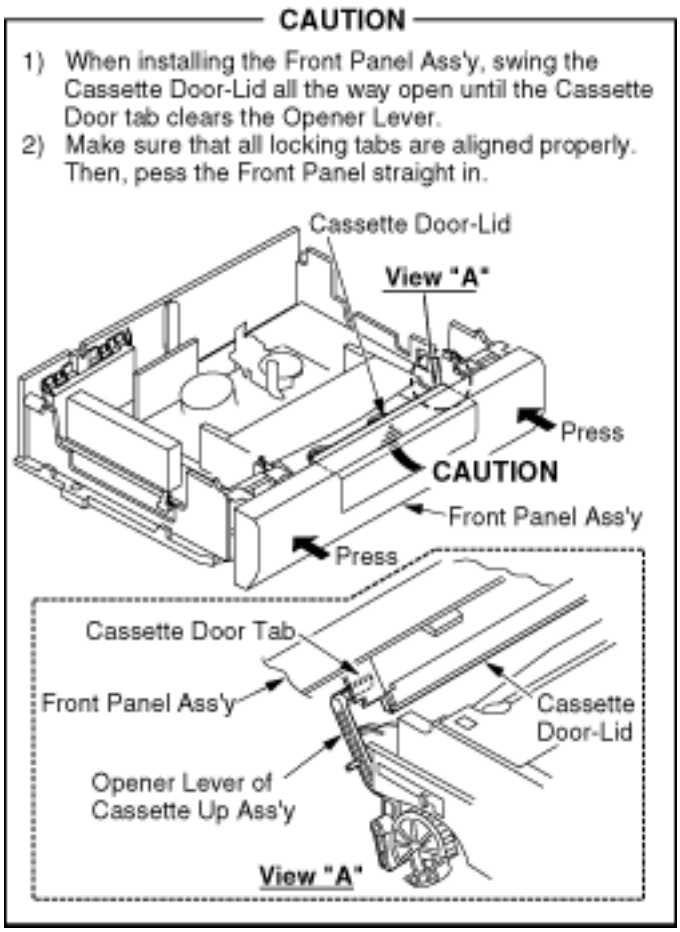
TOP PREVIOUS NEXT

CAUTION:

Opener Lever may be damaged when Front Panel Ass´y is installed, with Cassette Door-Lid of Front Panel Ass´y and Opener Lever of Cassette Up Ass´y set incorrectly.

Installation of Front Panel Ass´y

Fig. D4-2


CAUTION
1) When installing the Front Panel Ass'y, swing the Cassette Door-Lid all the way open until the Cassette Door tab clears the Opener Lever.
2) Make sure that all locking tabs are aligned properly. Then, pess the Front Panel straight in.
Cassette Door-Lid
View "A"
Press
CAUTION
Front Panel Ass'y
Press
Cassette Door Tab
Front Panel Ass'y
Cassette Door-Lid
Opener Lever of Cassette Up Ass'y
View "A"

TOP PREVIOUS NEXT

5.1.5 Operation C.B.A.

TOP PREVIOUS NEXT

5.1.5.1 Disassembly Procedure

TOP PREVIOUS NEXT

5.1.5.1 Disassembly Procedure

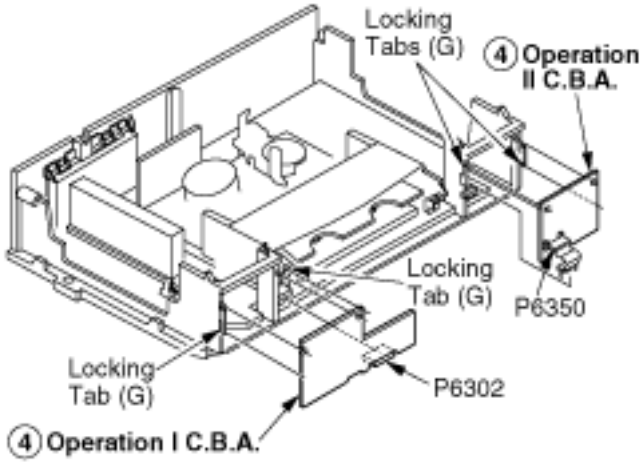
TOP PREVIOUS NEXT

1. Releasing 4 Locking Tabs (G).
2. Disconnect 2 Connectors P6302, and P6350 on the Operation I and II C.B.A.s.

Note:

Work carefully so as not to break the Tabs.

Fig. D5



TOP PREVIOUS NEXT

5.1.6 VCR Chassis Unit

TOP PREVIOUS NEXT

5.1.6.1 Disassembly Procedure

5.1.6.2 Reassembly Notes

TOP PREVIOUS NEXT

5.1.6.1 Disassembly Procedure

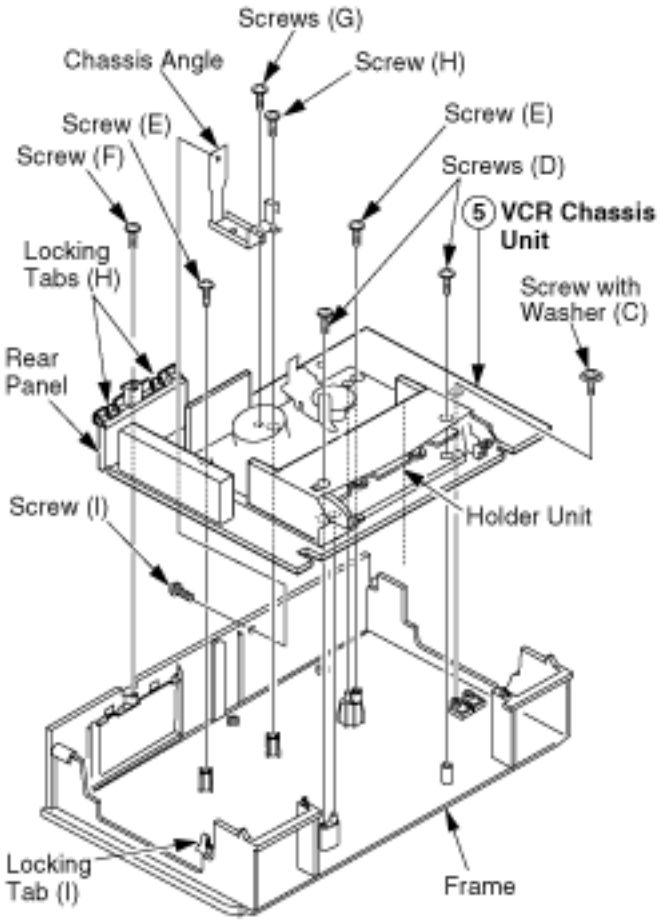
TOP PREVIOUS NEXT

1. Slide the Holder Unit (refer to " METHOD FOR LOADING/UNLOADING OF MECHANISM " in Service Notes) to gain access to 2 Screws (D) for removal.

2. Remove Screws (E), (F), (G), (H), (I), and Screw with Washer (C).

3. Remove Chassis Angle.

Fig. D6-1

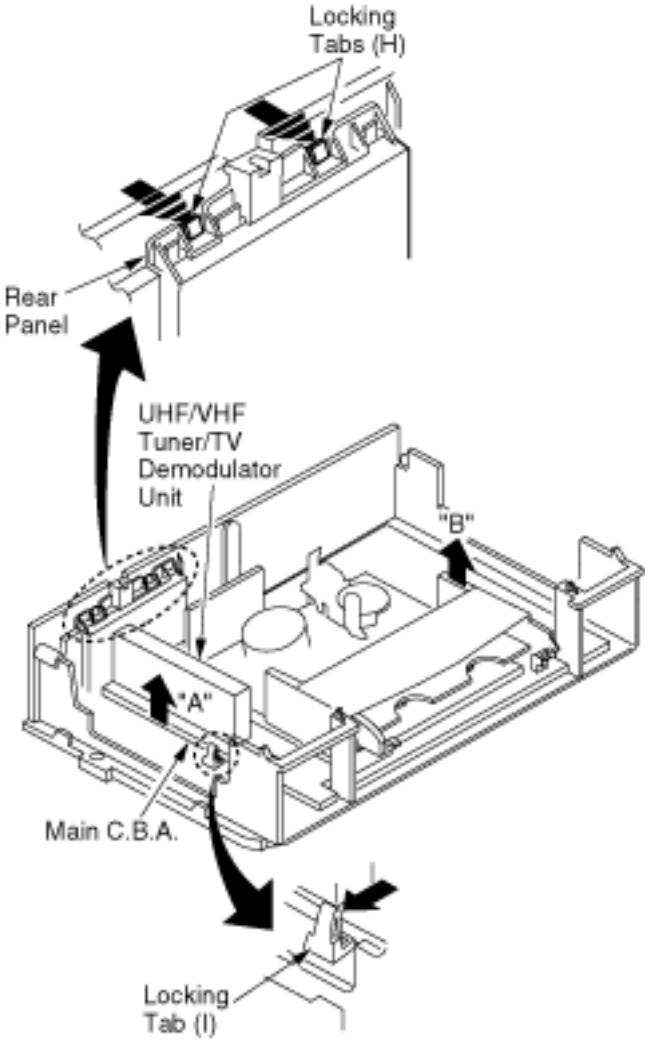


4. Push 2 Locking Tabs (H) inward to release while lifting the Rear Panel.

5. Push Locking Tab (I) outward while gently lifting the left side of the Main C.B.A. (Portion "A").

6. Lift the right side of the Cassette Up Ass´y (Portion "B") and remove VCR Chassis Unit out of the Frame.

Fig. D6-2



Note:

1. DO NOT pull upward on the UHF/VHF Tuner/TV Demodulator Unit because you may crack the Main C.B.A.

2. Work carefully so as not to break tabs.

TOP PREVIOUS NEXT

5.1.6.2 Reassembly Notes

TOP PREVIOUS NEXT

1. When installing 2 Screws (D), slide the Holder Unit (refer to " METHOD FOR LOADING/UNLOADING OF MECHANISM " in Service Notes) to tighten screws. Then slide it back to the EJECT Position.

   Make sure that Mechanism and Cassette Up Ass´y are in the EJECT Position.(Refer to " EJECT Position Confirmation " in Disassembly/Assembly Procedures of Mechanism.)

TOP PREVIOUS NEXT

5.1.7 Main C.B.A.

TOP PREVIOUS NEXT

5.1.7.1 Disassembly Procedure

5.1.7.2 Reassembly Notes

TOP PREVIOUS NEXT

5.1.7.1 Disassembly Procedure

TOP PREVIOUS NEXT

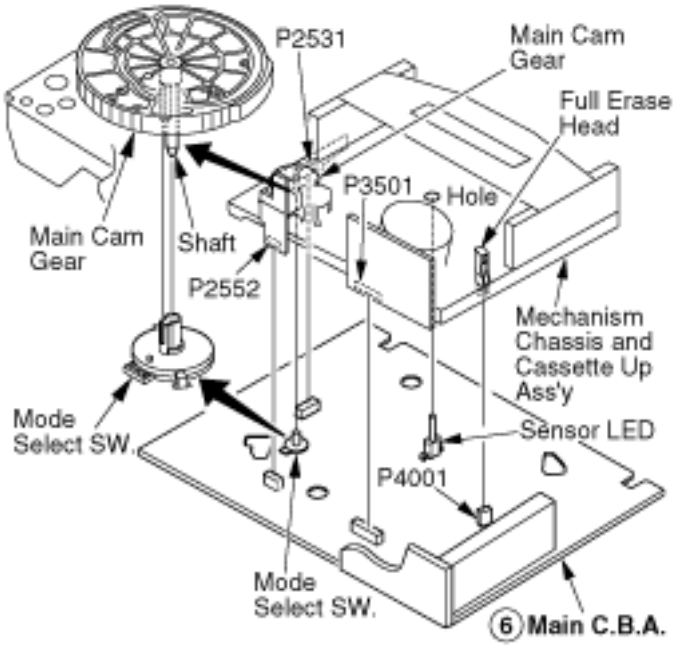
1. Disconnect 4 Connectors of P2531, P2552, P3501 and P4001.

2. Carefully lift the Mechanism Chassis and Cassette Up Ass´y straight out from the Main C.B.A.

Note:

Work carefully so as not to break Sensor LED, when lifting the Mechanism Chassis and Cassette Up Ass´y.

Fig. D7-1



TOP PREVIOUS NEXT

5.1.7.2 Reassembly Notes

TOP PREVIOUS NEXT

Fig. D7-2

CAUTION

Installation of Mechanism Chassis and Cassette Up Ass'y onto Main C.B.A.

1. Make sure the Mode Select SW. on the Main C.B.A. is in **EJECT** position. If not, rotate the Mode Select SW. until the alignment projection is in the **EJECT** Position.
2. Make sure the Mechanism and Cassette Up Ass'y are in the **EJECT** Position. (Refer to "**EJECT** Position confirmation" of Mechanism Section in Disassembly/ Assembly Procedures.)

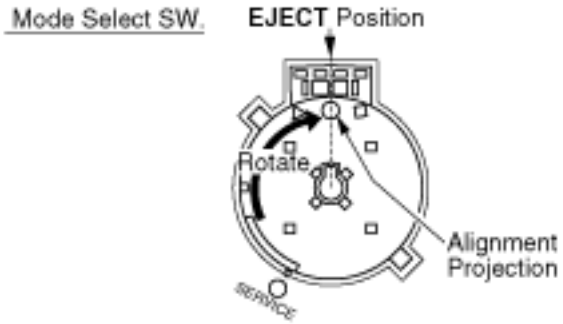


Fig. D7-2

3. Install the Mechanism Chassis and Cassette Up Ass'y straight onto the Main C.B.A. so that the Sensor LED clesrs the hole in the Mechanism Chassis and that 4 Connectors (P2531, P2552, P3501, and P4001) are aligned and seated securely.

TOP PREVIOUS NEXT

5.1.8 Cassette Up Ass´y

TOP PREVIOUS NEXT

CAUTION:

Opener Lever may be damaged when Cassette Up Ass´y is removed, with Front Panel Ass´y attached.

Remove the Cassette Up Ass´y as follows:

5.1.8.1 Disassembly Procedure

5.1.8.2 Reassembly Notes

TOP PREVIOUS NEXT

5.1.8.1 Disassembly Procedure

TOP PREVIOUS NEXT

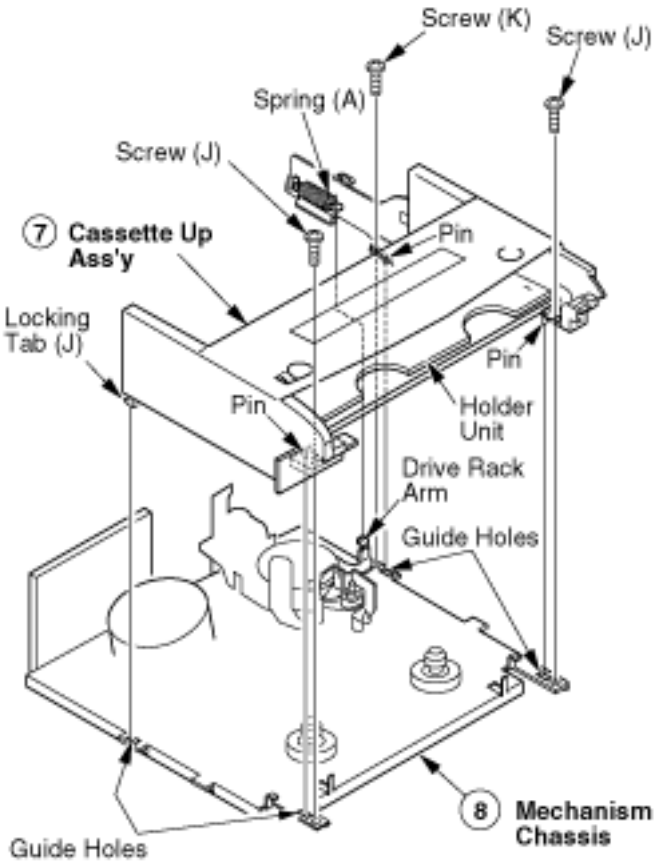
1. Slide Holder Unit (refer to " METHOD FOR LOADING/UNLOADING OF MECHANISM " in Service Notes) to gain access to 2 Screws (J) for removal.

2. Remove Screw (K).

3. Unhook Spring (A).

4. Slide the Cassette Up Ass´y towards the front to release Locking Tab (J). Then, lift it up and remove.

Fig. D8



TOP PREVIOUS NEXT

5.1.8.2 Reassembly Notes

TOP PREVIOUS NEXT

Installation of Cassette Up Ass´y

1. Confirm that the 3 pins and Locking Tab (J) under the Cassette Up Ass´y are in each of the 4 Guide Holes on the Mechanism Chassis when installing the Cassette Up Ass´y. Then, slide the Cassette Up Ass´y towardsthe back.

2. Slide Holder Unit (refer to " METHOD FOR LOADING/UNLOADING OF MECHANISM " in Service Notes) to tighten 2 Screws (J) and Screw (K).

   Be careful not to tighten screws too much, or the Cassette Up Ass´y may be bent outward.

   Then, slide it back to the EJECT Position.

3. Hook Spring (A) to the Drive Rack Arm on the Mechanism Chassis.

TOP PREVIOUS NEXT

5.2 MECHANISM SECTION

TOP PREVIOUS NEXT

5.2.1 Disassembly Method

5.2.2 EJECT Position Confirmation

5.2.3 Cylinder Unit

5.2.3.1 Disassembly Procedure

5.2.3.2 Reassembly Notes

5.2.4 Upper Cylinder Unit

5.2.4.1 Disassembly Procedure

5.2.4.2 Reassembly Notes

5.2.5 Opener Piece, Pinch Arm Unit, Motor Block Ass´y, Audio Control Head Unit, and Cleaner Arm Unit

5.2.5.1 Disassembly Procedure

5.2.5.2 Reassembly Notes

5.2.6 Main Cam Gear and Drive Rack Arm

5.2.6.1 Disassembly Procedure

5.2.6.2 Reassembly Notes

5.2.7 Main Lever

5.2.7.1 Disassembly Procedure

5.2.7.2 Reassembly Notes

5.2.8 P5 Arm Unit and Main Lever Drive Arm

5.2.8.1 Disassembly Procedure

5.2.8.2 Reassembly Notes

5.2.9 T Brake Unit, Changing Lever A, and T Reel Table

5.2.9.1 Disassembly Procedure

5.2.9.2 Reassembly Notes

5.2.10 Full Erase Head, Tension Arm Unit, S Spring Arm, and S Reel Table

5.2.10.1 Disassembly Procedure

5.2.10.2 Reassembly Notes

5.2.11 S Brake Arm Unit, Main Lever Guide, Loading Post Base -S, and Loading Post Base -T Unit

5.2.11.1 Disassembly Procedure

5.2.11.2 Reassembly Notes

5.2.12 Capstan Rotor Unit, Capstan Holder Unit, and SS Brake Arm Unit

5.2.12.1 Disassembly Procedure

5.2.12.2 Reassembly Notes

5.2.13 Junction C.B.A., Capstan Stator Unit, Sub Rotor, and PCB Holder

5.2.13.1 Disassembly Procedure

5.2.13.2 Reassembly Notes

5.2.14 T Loading Arm Unit and S Loading Arm Unit

5.2.14.1 Disassembly Procedure

5.2.14.2 Reassembly Notes

5.2.15 Center Clutch Unit, Changing Gear Spring, Changing Gear, Changing Lever-B, and Idler Arm Unit

5.2.15.1 Disassembly Procedure

5.2.15.2 Reassembly Notes

5.2.16 Loading Rack Unit

5.2.16.1 Disassembly Procedure

5.2.16.2 Reassembly Notes

TOP PREVIOUS NEXT

5.2.1 Disassembly Method

TOP PREVIOUS NEXT

Fig. J1-1

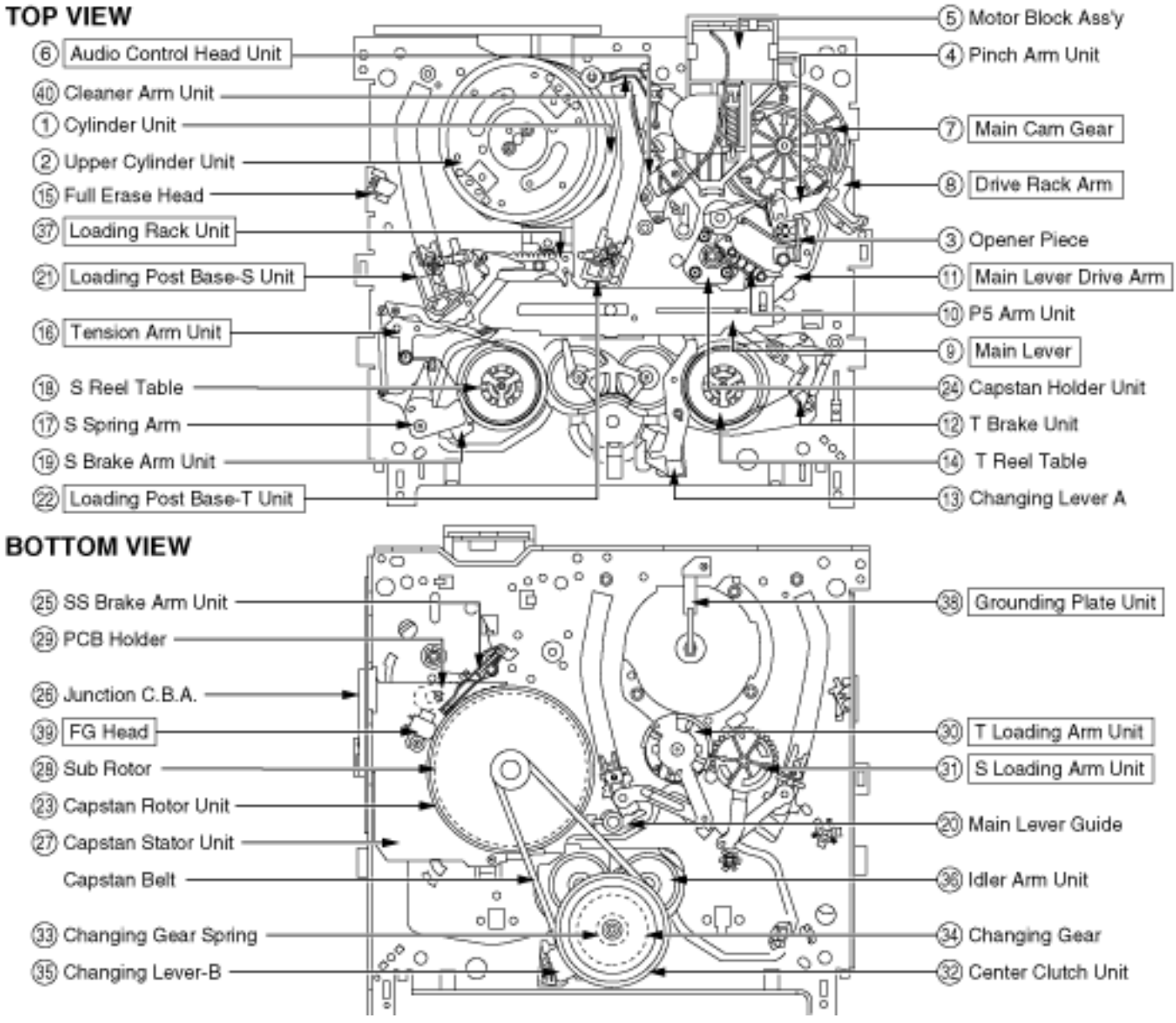
This chart indicates Step/Location No. of Parts to be serviced and prior steps to gain access items to be serviced when disassembling.
When reassembling, perform the step(s) in the reverse order.

Step Loc. No.	Part	Prior Step(s)	Step Loc. No.	Part	Prior Step(s)	Step Loc. No.	Part	Prior Step(s)	Step Loc. No.	Part	Prior Step(s)
①	Cylinder Unit	----------	⑪	Main Lever Drive Arm	3, 4, 5, 7, 8, 9	㉑	Loading Post Base-S Unit	16	㉛	S Loading Arm Unit	30
②	Upper Cylinder Unit	----------	⑫	T Brake Unit	9	㉒	Loading Post Base-T Unit	9, 20	㉜	Center Clutch Unit	----------
③	Opener Piece	----------	⑬	Changing Lever A	9	㉓	Capstan Rotor Unit	----------	㉝	Changing Gear Spring	32
④	Pinch Arm Unit	3	⑭	T Reel Table	9, 12, 13	㉔	Capstan Holder Unit	23	㉞	Changing Gear	32, 33
⑤	Motor Block Ass'y	----------	⑮	Full Erase Head	----------	㉕	SS Brake Arm Unit	----------	㉟	Changing Lever-B	32, 33, 34
⑥	Audio Control Head Unit	5	⑯	Tension Arm Unit	----------	㉖	Junction C.B.A.	----------	㊱	Idler Arm Unit	32, 33, 34
⑦	Main Cam Gear	3, 4, 5	⑰	S Spring Arm	----------	㉗	Capstan Stator Unit	23, 25, 26	㊲	Loading Rack Unit	9, 30
⑧	Drive Rack Arm	3, 4, 5, 7	⑱	S Reel Table	16, 17	㉘	Sub Rotor	23, 25, 26, 27	㊳	Grounding Plate Unit	----------
⑨	Main Lever	----------	⑲	S Brake Arm Unit	9, 16, 17, 18	㉙	PCB Holder	23, 25, 26, 27	㊴	FG Head	----------
⑩	P5 Arm Unit	9	⑳	Main Lever Guide	9	㉚	T Loading Arm Unit	----------	㊵	Cleaner Arm Unit	----------

Step/Loc. No.: Order of steps in procedure. Part : Part to be removed or installed. Prior Step(s) : Steps to be completed prior to the current step.

Note: When the mechanical parts surrounded by rectangle are removed or replaced, be sure to perform necessary adjustment or alignment procedures according to the mechanical adjustment procedures section and disassembly/assembly procedures of mechanism section.

Perform all disassembly and alignments procedures in EJECT Position.

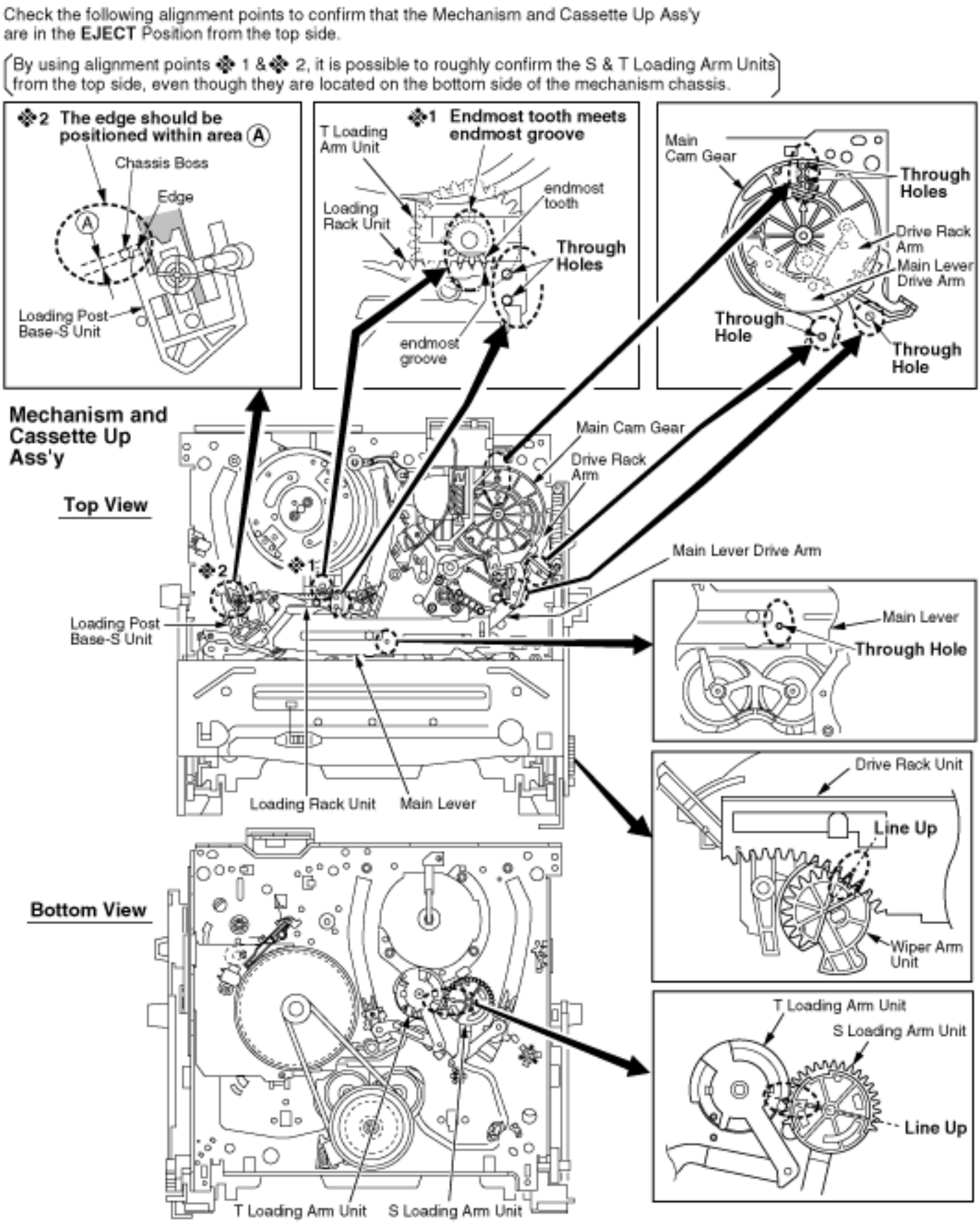


TOP PREVIOUS NEXT

5.2.2 EJECT Position Confirmation

TOP PREVIOUS NEXT

Fig. J1-2


Check the following alignment points to confirm that the Mechanism and Cassette Up Ass'y are in the EJECT Position from the top side.
By using alignment points ✥1 & ✥2, it is possible to roughly confirm the S & T Loading Arm Units from the top side, even though they are located on the bottom side of the mechanism chassis.
✥2 The edge should be positioned within area (A)
Chassis Boss
Edge
Loading Post Base-S Unit
✥1 Endmost tooth meets endmost groove
T Loading Arm Unit
Loading Rack Unit
endmost tooth
Through Holes
endmost groove
Main Cam Gear
Through Holes
Drive Rack Arm
Main Lever Drive Arm
Through Hole
Through Hole
Mechanism and Cassette Up Ass'y
Top View
Main Cam Gear
Drive Rack Arm
Main Lever Drive Arm
Loading Post Base-S Unit
Main Lever
Through Hole
Loading Rack Unit
Main Lever
Drive Rack Unit
Line Up
Wiper Arm Unit
Bottom View
T Loading Arm Unit
S Loading Arm Unit
Line Up
T Loading Arm Unit
S Loading Arm Unit

TOP PREVIOUS NEXT

5.2.3 Cylinder Unit

TOP PREVIOUS NEXT

5.2.3.1 Disassembly Procedure

5.2.3.2 Reassembly Notes

TOP PREVIOUS NEXT

5.2.3.1 Disassembly Procedure

TOP PREVIOUS NEXT

1. Remove 3 Screws (A) and 2 Screws with Washers (A). Then, lift the Cylinder Unit and the Head Amp C.B.A. out from the mechanism.

2. Unsolder P3502 and P3503. Then, remove the Head Amp C.B.A.

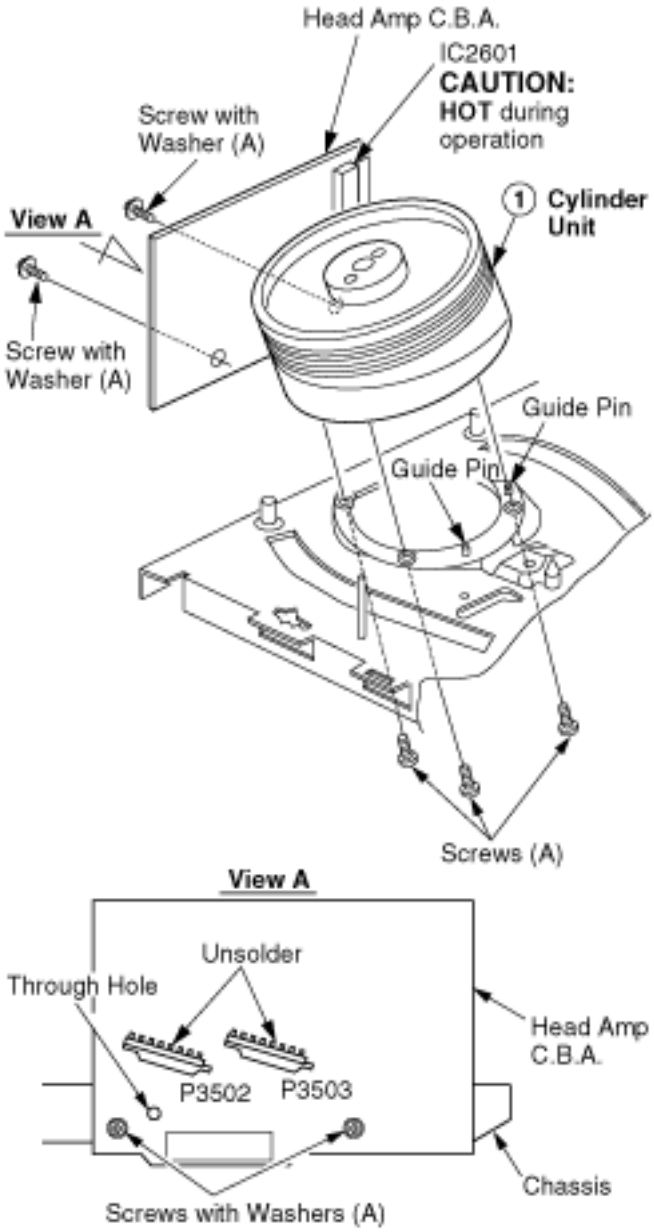
Note:

Use extreme care when removing or replacing the Cylinder Unit. Do not touch the Video Heads during servicing.

CAUTION:

When removing the Cylinder Unit, avoid touching IC2601 on the Head Amp C.B.A. because it is HOT during operation.

Fig. J2-1



TOP PREVIOUS NEXT

5.2.3.2 Reassembly Notes

TOP PREVIOUS NEXT

1. Use extreme care when removing or replacing the Cylinder Unit. Do not touch the Video Heads during servicing.

2. Installation of Cylinder Unit

   A. Install the Cylinder Unit so that the 2 holes on the lower surface of the Cylinder Unit fit over the 2 Guide Pins on the Cylinder Base and loosely secure it with 3 Screws (A).

   B. Install the Head Amp C.B.A. so that the hole on the Head Amp C.B.A. lines up with the hole on the chassis and secure it with 2 Screws with Washers (A).

   C. Position the Cylinder Unit so that foil patterns of connectors (P3502 and P3503) and Head Amp C.B.A. are aligned, and tighten 3 Screws (A).

   D. Solder connectors (P3502 and P3503).

3. Adjustment of Grounding Plate Unit

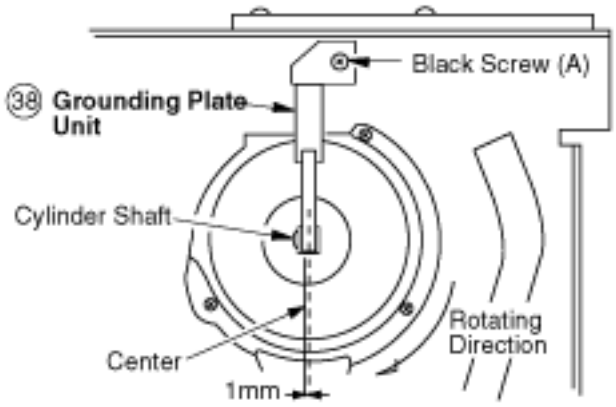
   A. After installing, make sure that the Grounding Plate Unit, on the bottom side of mechanism chassis, is positioned on the right side of the Cylinder shaft so that the center line of the plate is just less than 1.0 mm measured from the centerof the Cylinder shaft.

      If required, adjust the plate position by loosening Black Screw (A).

      Never install the Grounding Plate Unit on the left side of the Cylinder shaft.

      Incorrect positioning will cause cylinder buzz.

Fig. J2-2



4. After installing, perform the " TAPE INTERCHANGEABILITY ADJUSTMENT (FINAL ADJUSTMENT) " procedures.

TOP PREVIOUS NEXT

5.2.4 Upper Cylinder Unit

TOP PREVIOUS NEXT

5.2.4.1 Disassembly Procedure

5.2.4.2 Reassembly Notes

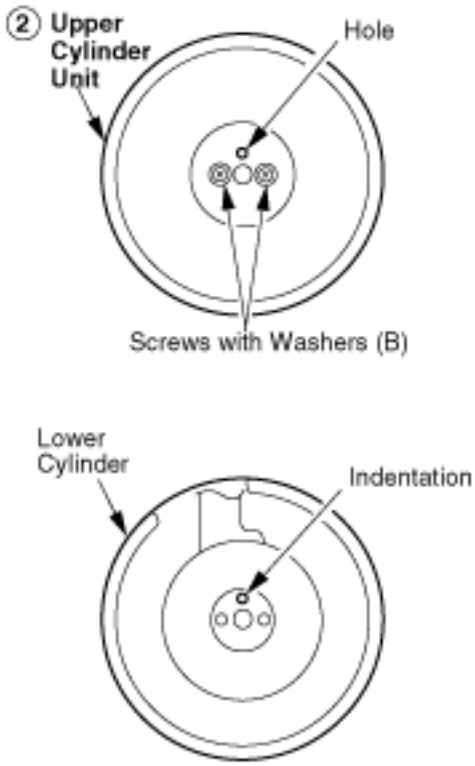
TOP PREVIOUS NEXT

5.2.4.1 Disassembly Procedure

TOP PREVIOUS NEXT

1. Remove 2 Screws with Washers (B).
2. Carefully lift the Upper Cylinder Unit from the shaft.

Fig. J3



Note:

Use extreme care when removing or replacing the Upper Cylinder Unit. Do not touch the Video Heads during servicing.

TOP PREVIOUS NEXT

5.2.4.2 Reassembly Notes

TOP PREVIOUS NEXT

1. Use extreme care when removing or replacing the Cylinder Unit. Do not touch the Video Heads during servicing.

2. Alignment of Upper Cylinder Unit

    A. When installing, make sure that the hole on the Upper Cylinder is aligned with the indentation on the Lower Cylinder.

    B. After installing, perform the " TAPE INTERCHANGEABILITY ADJUSTMENT (FINAL ADJUSTMENT) " procedures.

TOP PREVIOUS NEXT

5.2.5 Opener Piece, Pinch Arm Unit, Motor Block Ass´y, Audio Control Head Unit, and Cleaner Arm Unit

TOP PREVIOUS NEXT

5.2.5.1 Disassembly Procedure

5.2.5.2 Reassembly Notes

TOP PREVIOUS NEXT

5.2.5.1 Disassembly Procedure

TOP PREVIOUS NEXT

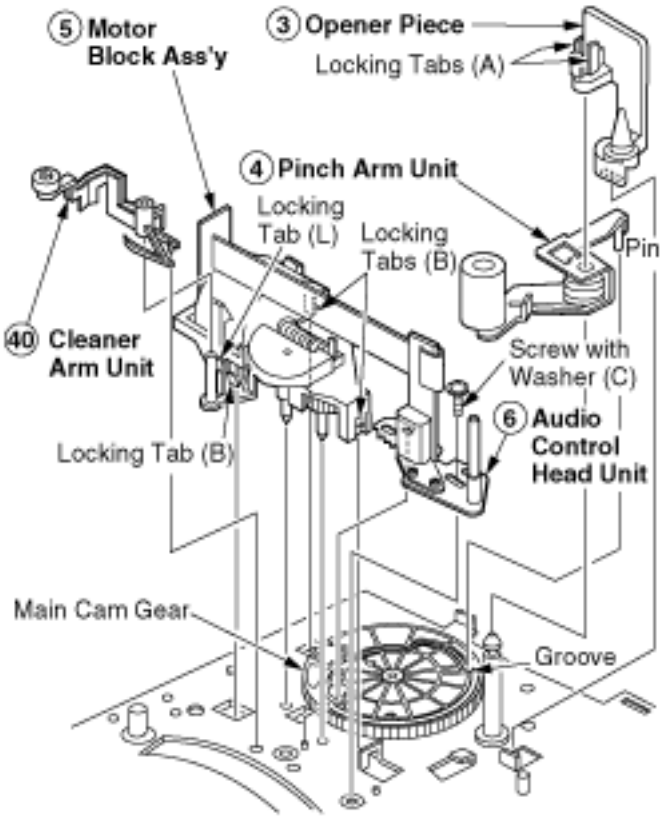
1. Remove the Opener Piece by pulling it upward while releasing 2 Locking Tabs (A).

2. Pull up on the Pinch Arm Unit.

3. Release 3 Locking Tabs (B) and remove Screw with Washer (C). Then, remove the Motor Block Ass´y and Audio Control Head Unit.

4. Remove the Cleaner Arm Unit by pulling it upward while releasing Locking Tab (L).

Fig. J4



TOP PREVIOUS NEXT

5.2.5.2 Reassembly Notes

TOP PREVIOUS NEXT

1. Installation of Audio Control Head Unit

    A. Install the Audio Control Head Unit before Motor Block Ass´y.

    B. After installing, perform the " TAPE INTERCHANGEABILITY ADJUSTMENT (FINAL ADJUSTMENT) " procedures.

2. Installation of Pinch Arm Unit

    A. Install the Pinch Arm Unit so that the Pin of Pinch Arm Unit fits in the groove of Main Cam Gear.

TOP PREVIOUS NEXT

5.2.6 Main Cam Gear and Drive Rack Arm

TOP PREVIOUS NEXT

5.2.6.1 Disassembly Procedure

5.2.6.2 Reassembly Notes

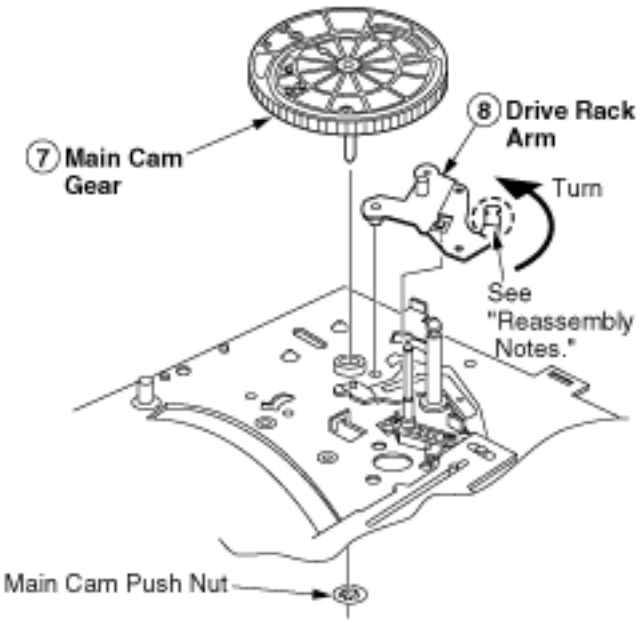
TOP PREVIOUS NEXT

5.2.6.1 Disassembly Procedure

TOP PREVIOUS NEXT

1. Remove the Main Cam Push Nut. (Refer to Note.)
2. Pull up on the Main Cam Gear.
3. Turn the Drive Rack Arm fully counterclockwise as shown.
4. Pull up on the Drive Rack Arm.

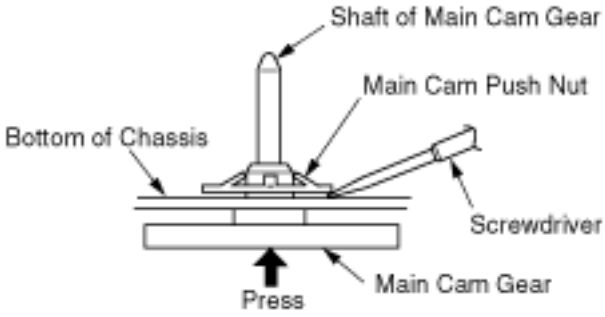
Fig. J5-1



Note:

When removing the Main Cam Push Nut, press the Main Cam Gear to make space between the Main Cam Push Nut and Bottom of Chassis. Then, remove the Main Cam Push Nut using a screwdriver etc.

Fig. J5-2



TOP PREVIOUS NEXT

5.2.6.2 Reassembly Notes

TOP PREVIOUS NEXT

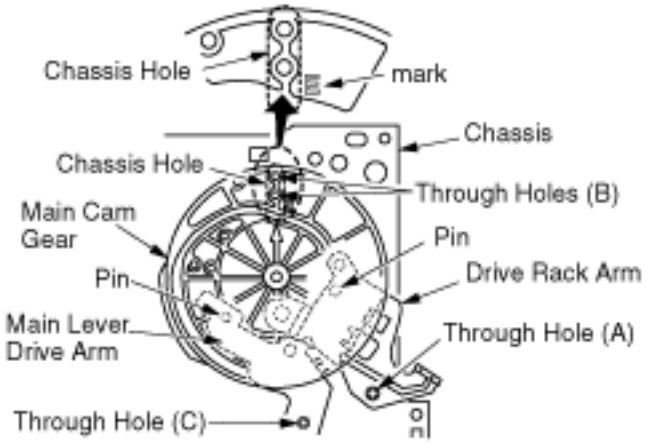
1. Alignment of Main Cam Gear, Drive Rack Arm, and Main Lever Drive Arm

   A. Confirm that the hole (C) on the Main Lever Drive Arm is aligned with the hole on chassis (Through hole (C)) as shown.

   B. Install the Drive Rack Arm so that the hole (A) is aligned with the hole on chassis (Through hole (A)) as shown.

   C. Install the Main Cam Gear so that the 2 holes (B) marked "E" are aligned with the hole on chassis (Through hole (B)) as shown. ("E" indicates the EJECT position.)

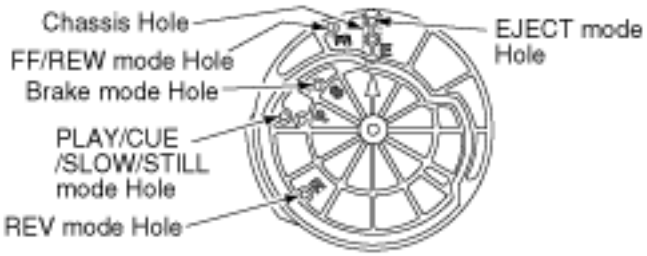
Fig. J5-3



2. Holes on Main Cam Gear

   A. The holes on Main Cam Gear should be aligned with the hole on chassis in each mode (Through hole) as shown.

Fig. J5-4



- Main Cam Gear Kit

A. Main Cam Gear is supplied as a Main Cam Gear Kit only (Kit No. VVGS0008).

Main Cam Gear Kit consists of a Main Cam Gear and a Main Cam Push Nut.

However, Main Cam Push Nut is available separately as a replacement part.

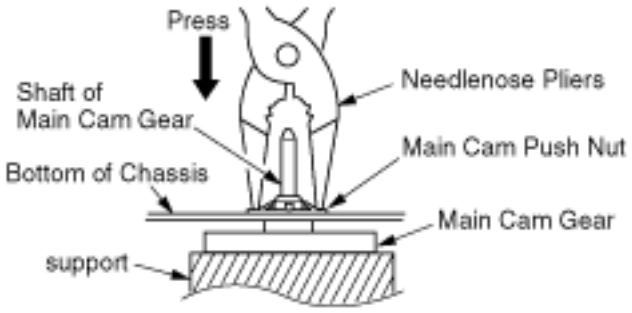
- Installation of Main Cam Gear and Main Cam Push Nut

A. Position the chassis upside down and place a Support under the Main Cam Gear.

Install the Main Cam Push Nut with Needlenose Pliers etc. so that it is flush with the chassis.

There may be some slight scratches on the Shaft of Main Cam Gear, when removing the Main Cam Gear. In case that the Main Cam Gear can be installed securely without tottering, it is fine to use the one. If any tottering, install all new parts.

Fig. J5-5



- The Main Cam Push Nut is not reusable. Install a new one.

- Make sure to hook Spring (A) of the Cassette Up Ass´y to the Drive Rack Arm. Refer to " Cassette Up Ass´y " in "Disassembly/Assembly Procedures of Cabinet."

TOP PREVIOUS NEXT

5.2.7 Main Lever

TOP PREVIOUS NEXT

5.2.7.1 Disassembly Procedure

5.2.7.2 Reassembly Notes

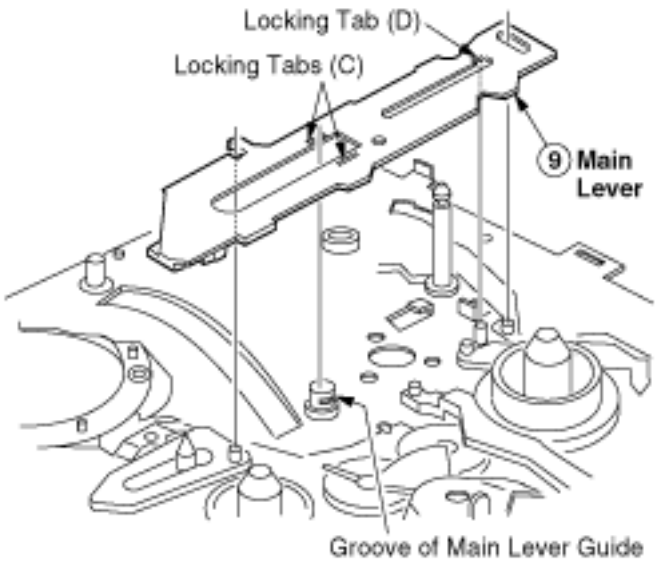
TOP PREVIOUS NEXT

5.2.7.1 Disassembly Procedure

TOP PREVIOUS NEXT

1. Release 2 Locking Tabs (C) and Locking Tab (D). Then, remove the Main Lever.

Fig. J6-1



TOP PREVIOUS NEXT

5.2.7.2 Reassembly Notes

TOP PREVIOUS NEXT

1. Installation/Alignment of Main Lever

   A. Make sure that the 2 holes of Loading Rack Unit are aligned with the holes on chassis (Through holes).

   B. Turn the P5 Arm Unit to the Capstan Rotor Unit Shaft side.

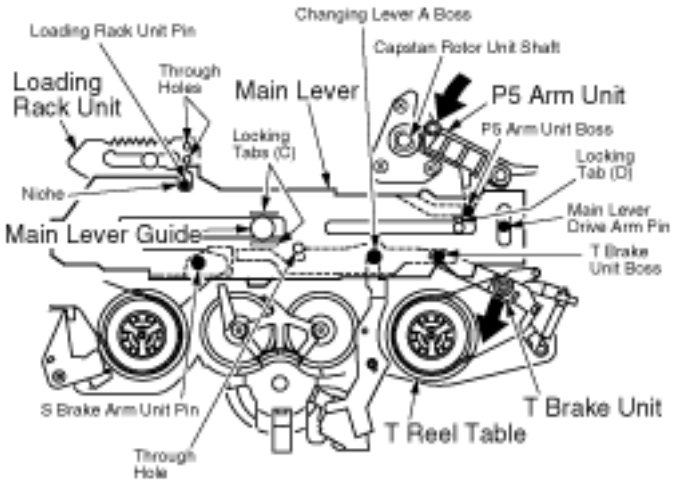
   C. Turn the T Brake Unit to the T Reel Table side.

   D. Position the Main Lever so that the Loading Rack Unit Pin fits in the niche of Main Lever.

      Confirm that pins and bosses are in the position and that the hole of Main Lever is aligned with the hole on chassis (Through hole) as shown. Then, install the Main Lever.

   E. Push down the Locking Tabs (C) to set in the groove of Main Lever Guide.

Fig. J6-2



TOP PREVIOUS NEXT

5.2.8 P5 Arm Unit and Main Lever Drive Arm

TOP PREVIOUS NEXT

5.2.8.1 Disassembly Procedure

5.2.8.2 Reassembly Notes

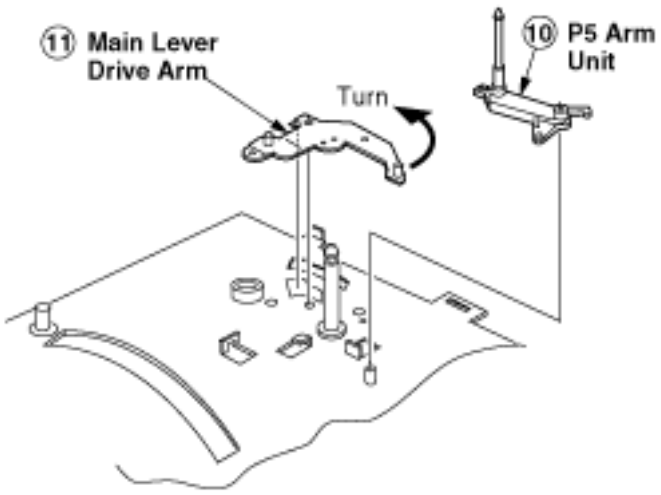
TOP PREVIOUS NEXT

5.2.8.1 Disassembly Procedure

TOP PREVIOUS NEXT

1. Pull up on the P5 Arm Unit.
2. Turn the Main Lever Drive Arm fully counterclockwise as shown.
3. Pull up on the Main Lever Drive Arm.

Fig. J7-1



TOP PREVIOUS NEXT

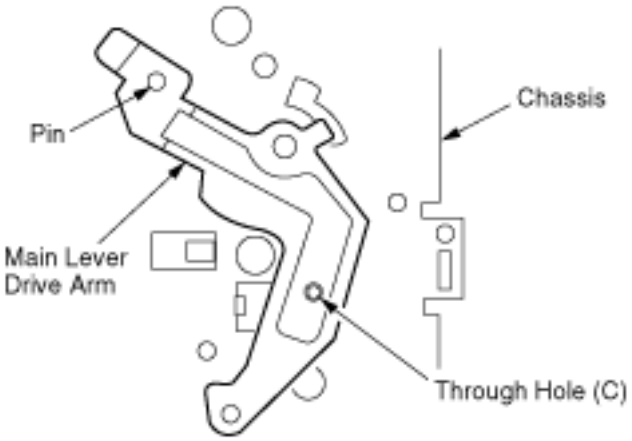
5.2.8.2 Reassembly Notes

TOP PREVIOUS NEXT

1. Alignment of Main Lever Drive Arm

    A. Install the Main Lever Drive Arm so that the hole (C) is aligned with the hole on the chassis Through hole (C)) as shown.

Fig. J7-2



TOP PREVIOUS NEXT

5.2.9 T Brake Unit, Changing Lever A, and T Reel Table

TOP PREVIOUS NEXT

5.2.9.1 Disassembly Procedure

5.2.9.2 Reassembly Notes

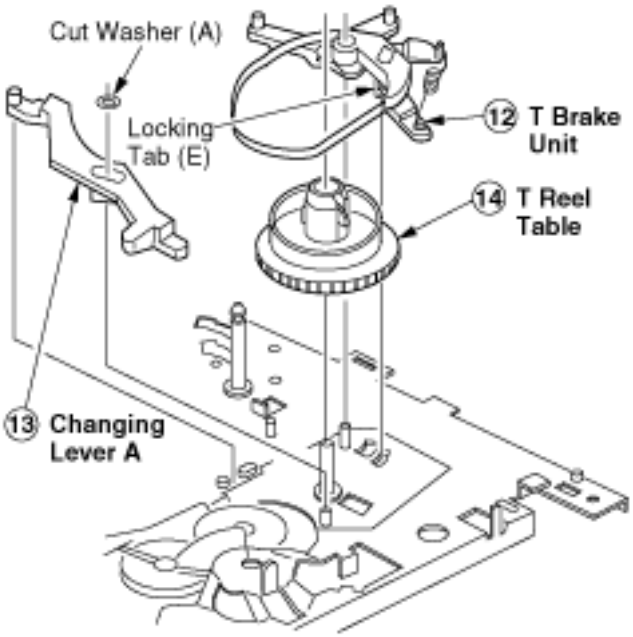
TOP PREVIOUS NEXT

5.2.9.1 Disassembly Procedure

TOP PREVIOUS NEXT

1. Remove the T Brake Unit while releasing Locking Tab (E) located under the chassis.
2. Remove Cut Washer (A). Then, pull up on the Changing Lever A and remove.
3. Pull up on the T Reel Table.

Fig. J8-1



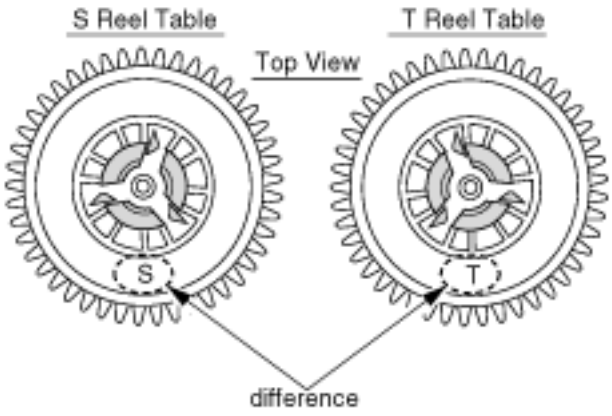
TOP PREVIOUS NEXT

5.2.9.2 Reassembly Notes

TOP PREVIOUS NEXT

1. How to distinguish between S Reel Table and T Reel Table

Fig. J8-2



2. Cut Washer (A) is not reusable. Install a new one.

TOP PREVIOUS NEXT

5.2.10 Full Erase Head, Tension Arm Unit, S Spring Arm, and S Reel Table

TOP PREVIOUS NEXT

5.2.10.1 Disassembly Procedure

5.2.10.2 Reassembly Notes

TOP PREVIOUS NEXT

5.2.10.1 Disassembly Procedure

TOP PREVIOUS NEXT

1. Turn the Full Erase Head fully counterclockwise while releasing Locking Tab (F) as shown. Then remove it.

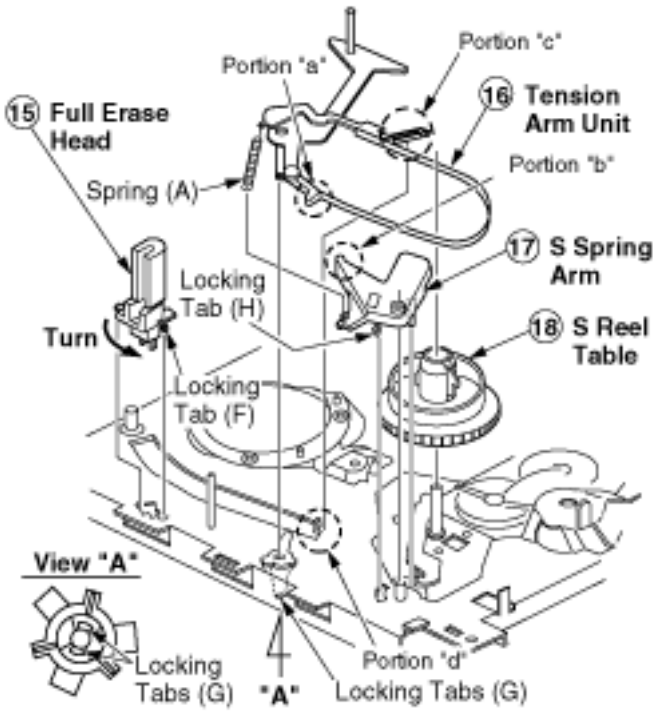
2. Unhook Spring (A).

3. Remove the Tension Arm Unit by pulling it up while releasing 2 Locking Tabs (G).

4. Remove the S Spring Arm while releasing Locking Tab (H).

5. Pull up on the S Reel Table.

Fig. J9-1



TOP PREVIOUS NEXT

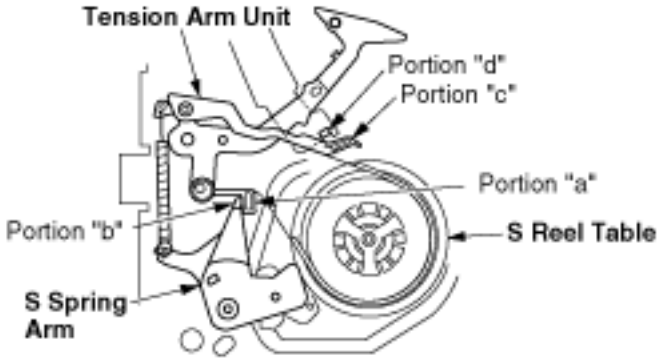
5.2.10.2 Reassembly Notes

TOP PREVIOUS NEXT

1. Confirmation/Adjustment of Tension Arm Unit

   A. When installing Tension Arm Unit and S Spring Arm, confirm "a," "b," "c," and "d" portion are in the proper position as shown.

Fig. J9-2



2. After installing, perform the " TENSION POST ADJUSTMENT " procedures.

TOP PREVIOUS NEXT

5.2.11 S Brake Arm Unit, Main Lever Guide, Loading Post Base -S, and Loading Post Base -T Unit

TOP PREVIOUS NEXT

5.2.11.1 Disassembly Procedure

5.2.11.2 Reassembly Notes

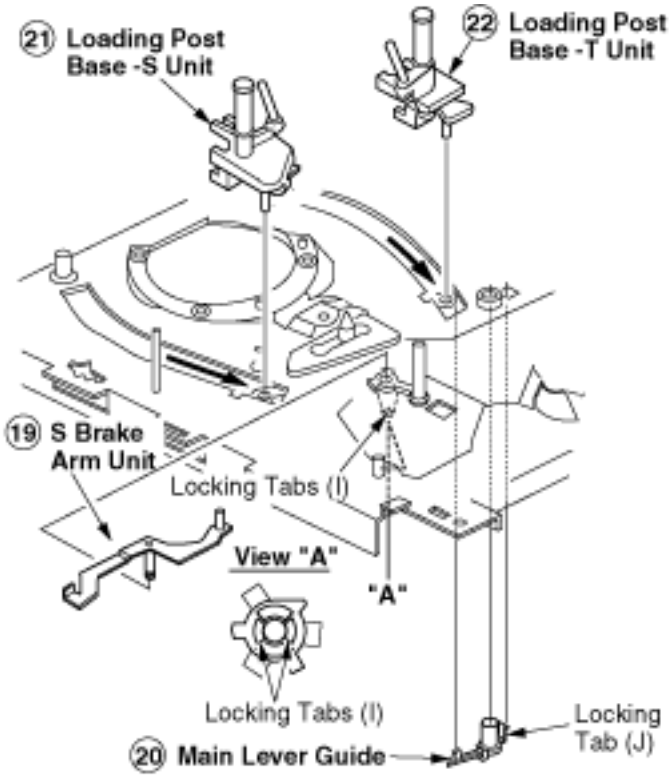
TOP PREVIOUS NEXT

5.2.11.1 Disassembly Procedure

TOP PREVIOUS NEXT

1. Remove the S Brake Arm Unit while releasing 2 Locking Tabs (I).
2. Remove the Main Lever Guide while releasing Locking Tab (J).
3. Slide the Loading Post Base -S and T Units to the end of the guide slots to remove.

Fig. J10



TOP PREVIOUS NEXT

5.2.11.2 Reassembly Notes

TOP PREVIOUS NEXT

1. Adjustment of Loading Post Base -S Unit and Loading Post Base -T Unit

    A. After installing, perform the " P2 AND P3 POST HEIGHT ADJUSTMENT (PRELIMINARY ADJUSTMENT) " procedures and " TAPE INTERCHANGEABILITY ADJUSTMENT (FINAL ADJUSTMENT) " procedures.

TOP PREVIOUS NEXT

5.2.12 Capstan Rotor Unit, Capstan Holder Unit, and SS Brake Arm Unit

TOP PREVIOUS NEXT

5.2.12.1 Disassembly Procedure

5.2.12.2 Reassembly Notes

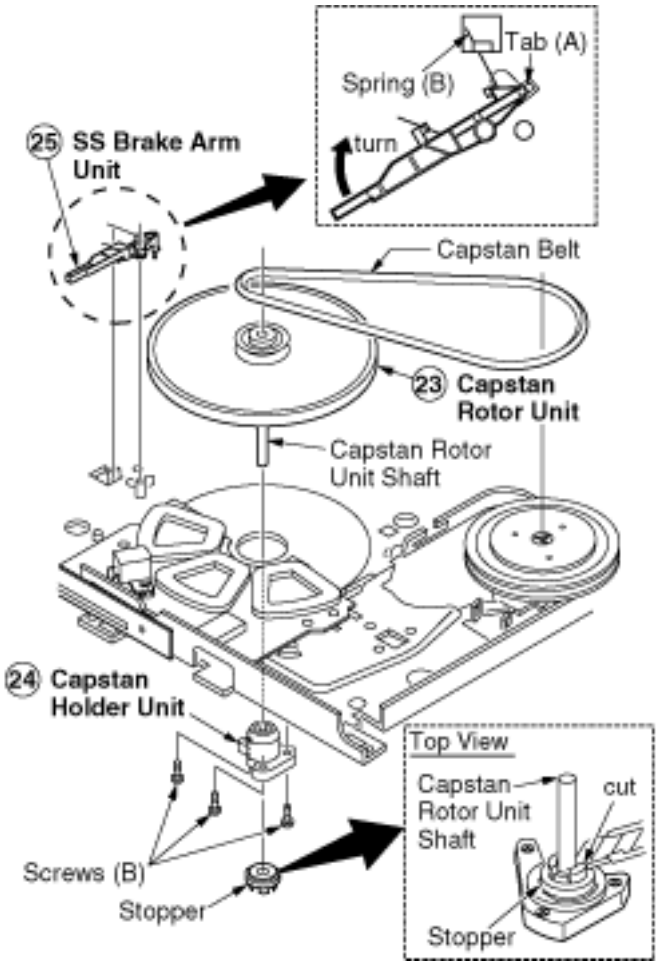
TOP PREVIOUS NEXT

5.2.12.1 Disassembly Procedure

TOP PREVIOUS NEXT

1. Remove the Capstan Belt.
2. Cut the Stopper with a cutter to remove.
3. Pull up on the Capstan Rotor Unit.
4. Remove 3 Screws (B). Then remove the Capstan Holder Unit.
5. Unhook Spring (B).
6. Turn the SS Brake Arm Unit so that the Tab (A) lines up with the niche. Then, remove the SS Brake Arm Unit.

Fig. J11-1



TOP PREVIOUS NEXT

5.2.12.2 Reassembly Notes

TOP PREVIOUS NEXT

1. Installation of Capstan Rotor Unit

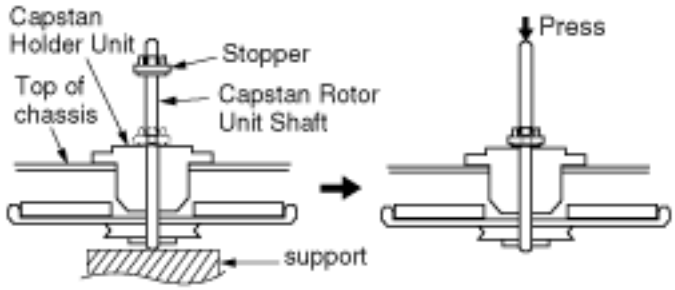
   A. Insert the Capstan Rotor Unit Shaft into the hole of the Capstan Holder Unit.

   B. Place a support under the Capstan Rotor Unit shaft. Install the Stopper. Be careful not to scratch the shaft or Capstan Holder Unit.

   C. Remove the support. Press the top end of the shaft down so that the Stopper is properly positioned.

      You should be able to move the shaft up and down slightly when properly positioned.

Fig. J11-2



- Capstan Rotor Kit

A. Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Rotor Kit only. (Kit No. VXPS0382K2) They are not reusable. Install all new parts.

B. Because even invisible scratches on the Capstan Rotor Unit shaft and the Capstan Holder Unit, made when cutting the Stopper, could cause tape path instability.

TOP PREVIOUS NEXT

5.2.13 Junction C.B.A., Capstan Stator Unit, Sub Rotor, and PCB Holder

TOP PREVIOUS NEXT

5.2.13.1 Disassembly Procedure

5.2.13.2 Reassembly Notes

TOP PREVIOUS NEXT

5.2.13.1 Disassembly Procedure

TOP PREVIOUS NEXT

1. Remove 2 Screws (C).

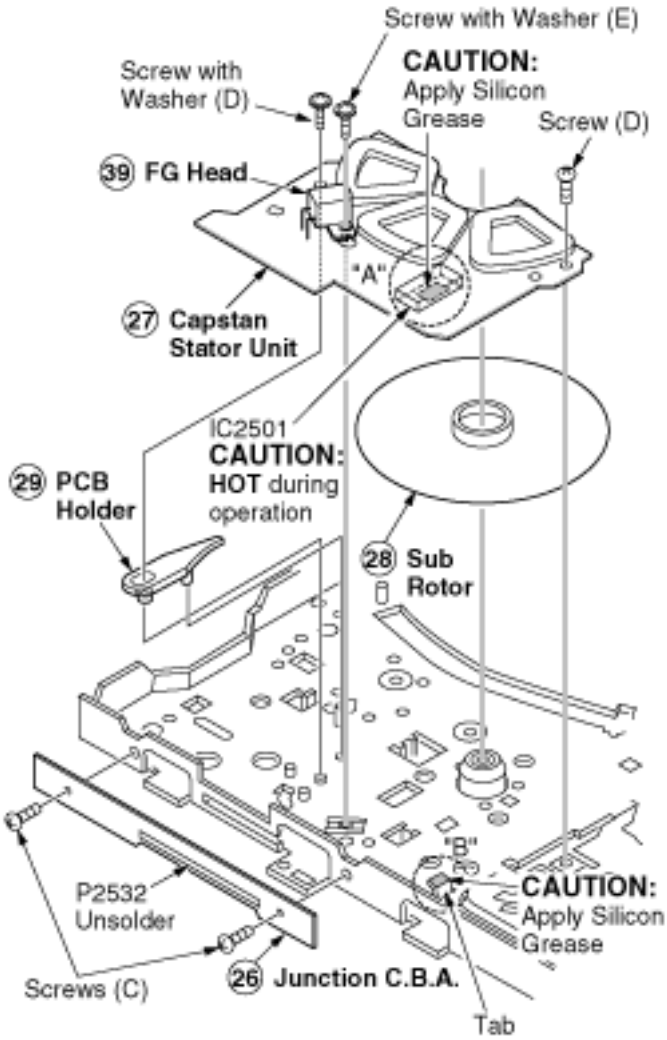
2. Unsolder P2532 on the Junction C.B.A. Then, remove the Junction C.B.A.

3. Remove Screw (D) and 2 Screws with Washers (D), (E). Then, remove Capstan Stator Unit, Sub Rotor, and PCB Holder.

   CAUTION:

   When removing Capstan Stator Unit, avoid touching IC2501 on the Capstan Stator Unit because it is HOT during operation.

Fig. J12-1



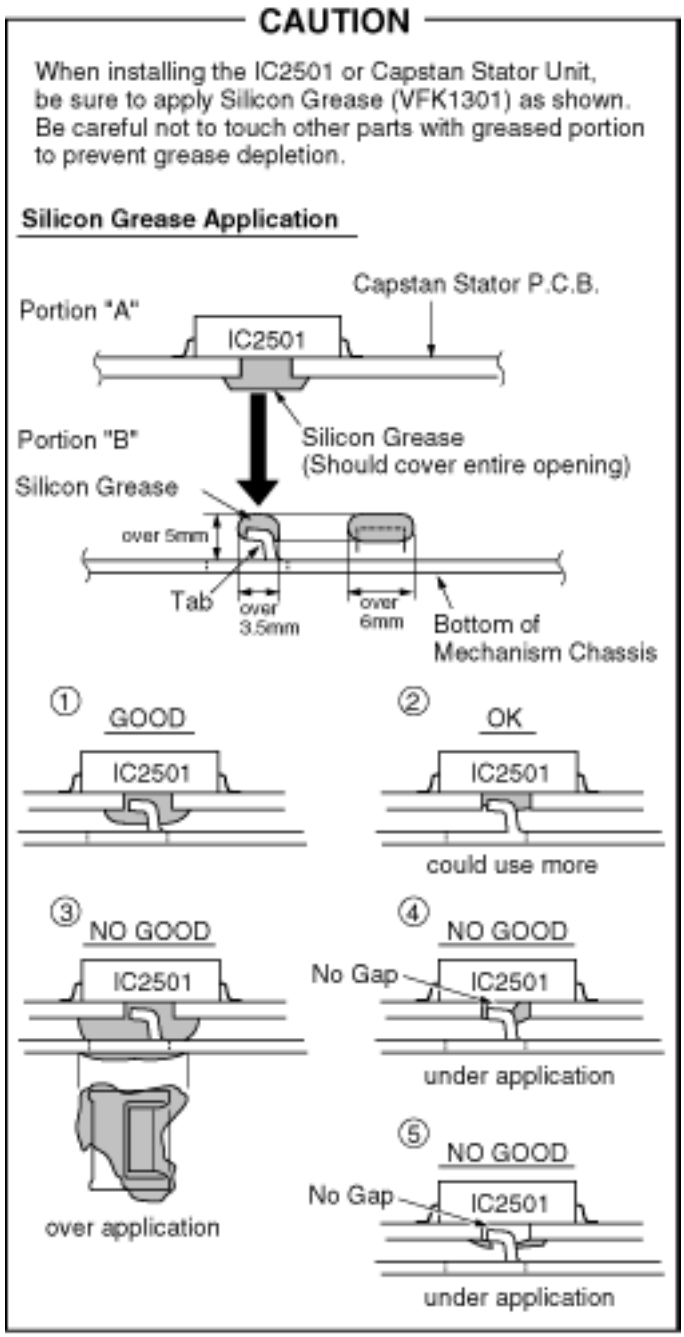
TOP PREVIOUS NEXT

5.2.13.2 Reassembly Notes

TOP PREVIOUS NEXT

1. Application of Silicon Grease

Fig. J12-2



2. Capstan Stator Kit

   A. Capstan Stator Unit, Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Stator Kit only (Kit No. VEMS0316K2).

However, IC2501(AN3845SC) is available separately as a replacement part.

Capstan Rotor Unit, Capstan Holder Unit, and Stopper are not reusable. Install all new parts.

Because even invisible scratches on the Capstan Rotor Unit shaft and the Capstan Holder Unit, made when cutting the Stopper, could cause tape path instability.

3. Adjustment of FG Head

   A. After installing, perform the " FG HEAD GAP ADJUSTMENT " procedures.

TOP PREVIOUS NEXT

5.2.14 T Loading Arm Unit and S Loading Arm Unit

TOP PREVIOUS NEXT

5.2.14.1 Disassembly Procedure

5.2.14.2 Reassembly Notes

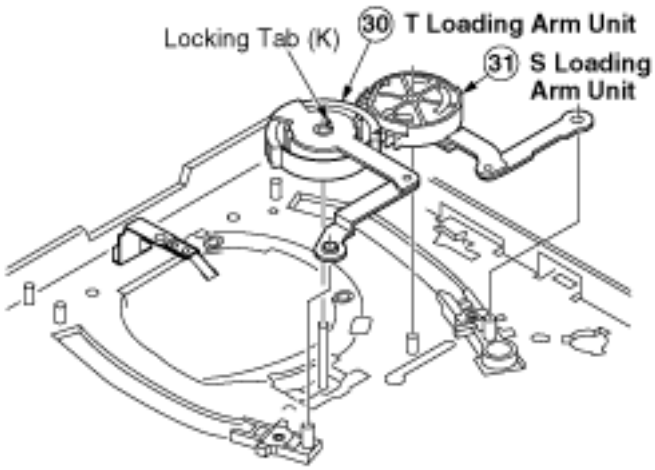
TOP PREVIOUS NEXT

5.2.14.1 Disassembly Procedure

TOP PREVIOUS NEXT

1. Remove the T Loading Arm Unit by pulling it up while releasing Locking Tab (K).
2. Pull up on the S Loading Arm Unit.

Fig. J13-1



TOP PREVIOUS NEXT

5.2.14.2 Reassembly Notes

TOP PREVIOUS NEXT

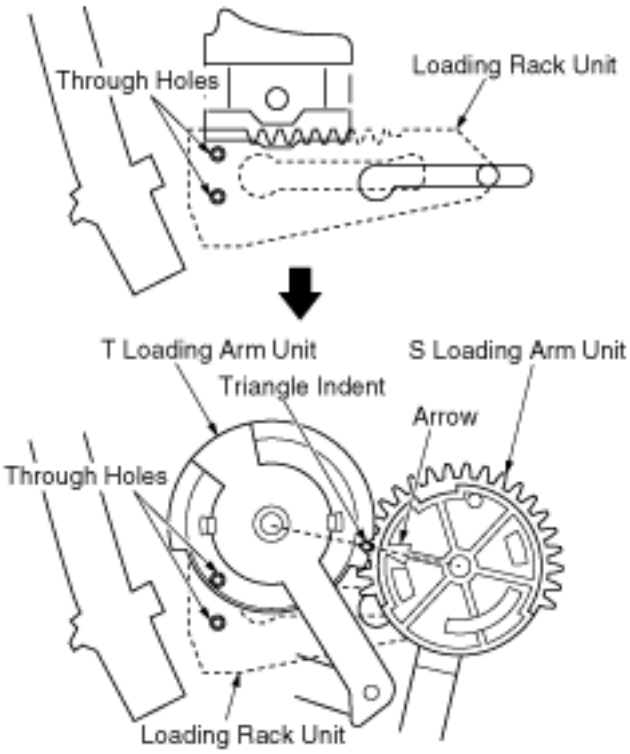
1. Alignment of Loading Rack Unit, T Loading Arm Unit, and S Loading Arm Unit

   A. Slide the Loading Rack Unit so that the holes on it and the holes on the chassis line up properly.

   B. Install the S Loading Arm Unit onto the Chassis.

   C. Install the T Loading Arm Unit so that the triangle-shaped indent is aligned with the arrow on the S Loading Arm Unit as shown. Confirm that each hole on the T Loading Arm Unit, Chassis, and Loading Rack Unit are through holes.

Fig. J13-2



TOP PREVIOUS NEXT

5.2.15 Center Clutch Unit, Changing Gear Spring, Changing Gear, Changing Lever-B, and Idler Arm Unit

TOP PREVIOUS NEXT

5.2.15.1 Disassembly Procedure

5.2.15.2 Reassembly Notes

TOP PREVIOUS NEXT

5.2.15.1 Disassembly Procedure

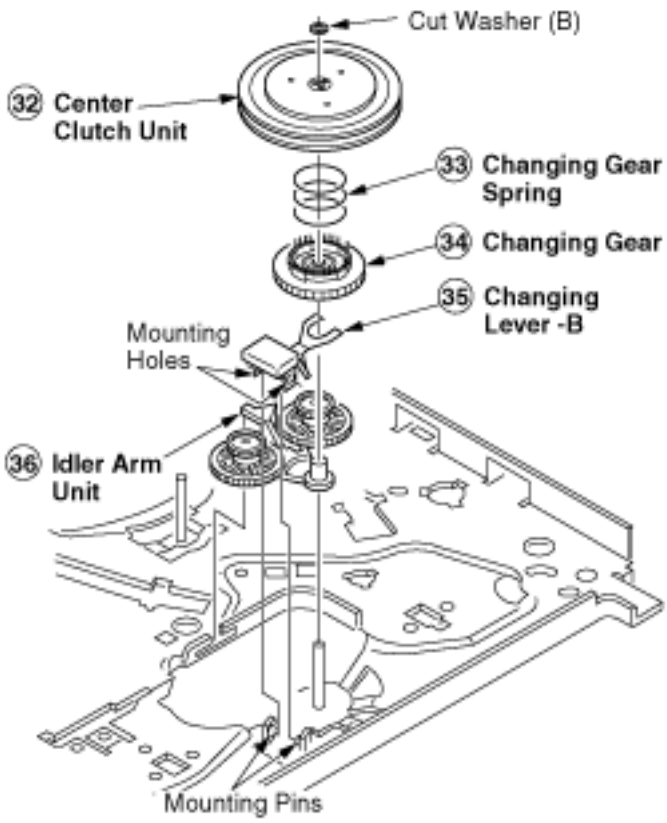
TOP PREVIOUS NEXT

1. Remove Cut Washer (B). Then remove the Center Clutch Unit, Changing Gear Spring, and Changing Gear.

2. Remove Changing Lever -B so that the 2 Mounting Holes clear Mounting Pins.

3. Pull up on the Idler Arm Unit.

Fig. J14-1



TOP PREVIOUS NEXT

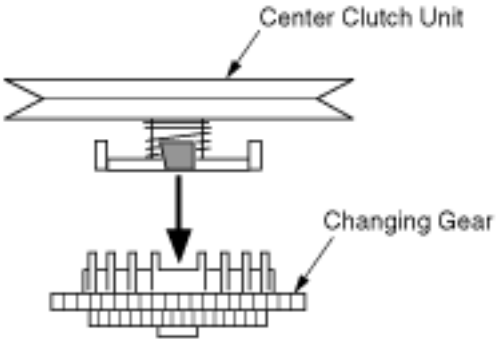
5.2.15.2 Reassembly Notes

TOP PREVIOUS NEXT

1. Installation of Center Clutch Unit

   A. Fit the Center Clutch Unit into the Changing Gear as shown.

Fig. J14-2



- Cut Washer (B) is not reusable. Install a new one.

TOP PREVIOUS NEXT

5.2.16 Loading Rack Unit

TOP PREVIOUS NEXT

5.2.16.1 Disassembly Procedure

5.2.16.2 Reassembly Notes

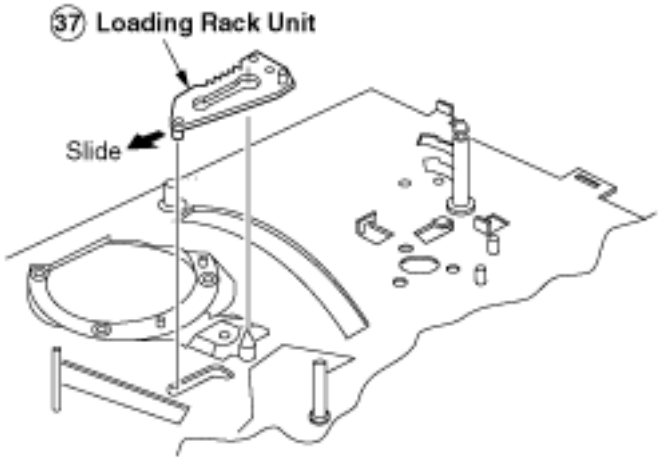
TOP PREVIOUS NEXT

5.2.16.1 Disassembly Procedure

TOP PREVIOUS NEXT

1. Slide the Loading Rack Unit as indicated by the arrow. Then, pull up on the Loading Rack Unit.

Fig. J15



TOP PREVIOUS NEXT

5.2.16.2 Reassembly Notes

TOP PREVIOUS NEXT

1. Alignment of Loading Rack Unit

    A. When installing Loading Rack Unit, refer to Reassembly Notes of " T Loading Arm Unit and S Loading Arm Unit ."

TOP PREVIOUS NEXT

5.3 DISASSEMBLY/ASSEMBLY PROCEDURES OF CASSETTE UP COMPARTMENT SECTION

TOP PREVIOUS NEXT

5.3.1 Top Plate, Wiper Arm Unit, and Holder Unit

5.3.1.1 Disassembly Procedure

5.3.1.2 Reassembly Notes

5.3.2 Sensor Cover, Opener Lever, and Drive Rack Unit

5.3.2.1 Disassembly Procedure

TOP PREVIOUS NEXT

5.3.1 Top Plate, Wiper Arm Unit, and Holder Unit

TOP PREVIOUS NEXT

5.3.1.1 Disassembly Procedure

5.3.1.2 Reassembly Notes

TOP PREVIOUS NEXT

5.3.1.1 Disassembly Procedure

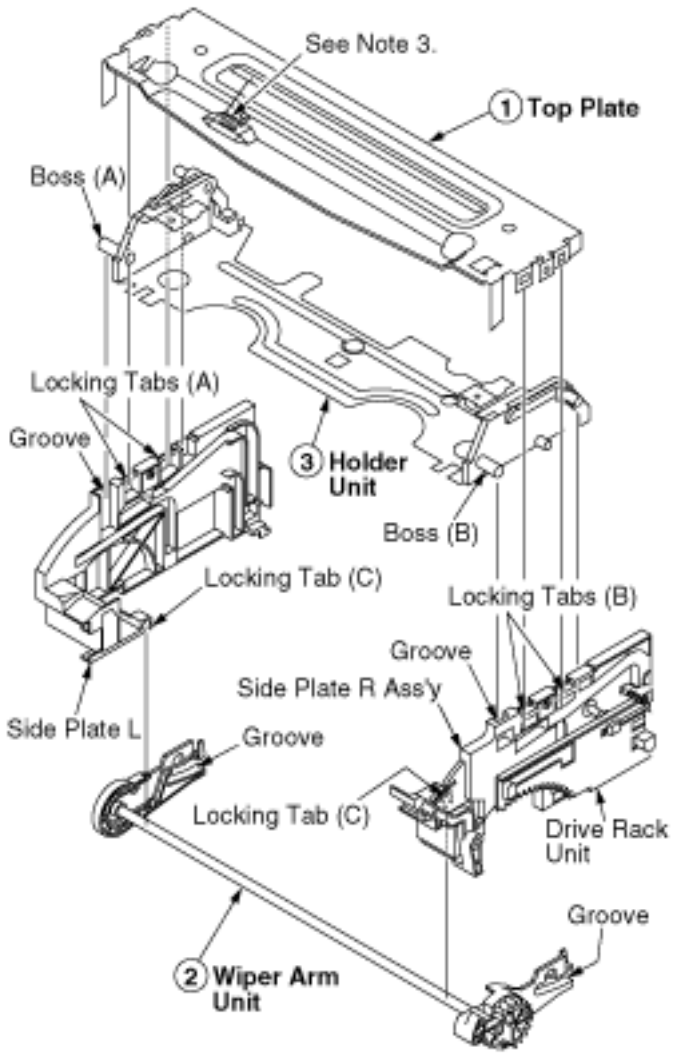
TOP PREVIOUS NEXT

1. Remove Top Plate by releasing 2 Locking Tabs (A) on the left side and 2 Locking Tabs (B) on the right side of the Top Plate.

2. Remove Wiper Arm Unit by releasing 2 Locking Tabs (C).

   Then, remove the Holder Unit.

Fig. K1-1



TOP PREVIOUS NEXT

5.3.1.2 Reassembly Notes

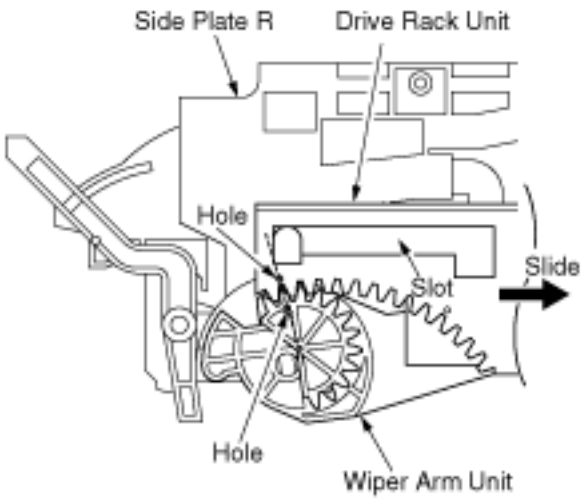
TOP PREVIOUS NEXT

1. Alignment of Wiper Arm Unit and Drive Rack Unit

   A. Slide the Drive Rack Unit to the far right as indicated by the arrow.

   B. Install the Wiper Arm Unit so that the hole on the Wiper Arm Unit is aligned with the hole on the Drive Rack Unit.

Fig. K1-2



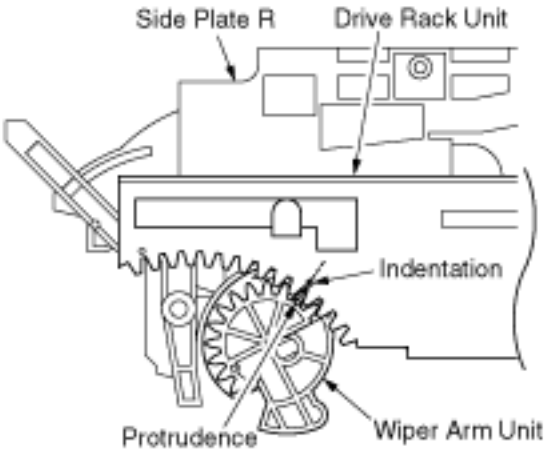
2. Installation of Holder Unit

   A. Turn the Wiper Arm Unit so that the grooves on each end are aligned with the each groove on Side Plate L and R.

   B. Insert Holder Unit boss (A) and (B) into the grooves (See Fig. K1-1 on previous page).

   C. Finally, in the EJECT Position, confirm that the protrudence on the Wiper Arm Unit is aligned with the indentation on the Drive Rack Unit.

Fig. K1-3



3. As an ESD countermeasure, make sure the spring is in contact with Top Cover.

TOP PREVIOUS NEXT

5.3.2 Sensor Cover, Opener Lever, and Drive Rack Unit

TOP PREVIOUS NEXT

5.3.2.1 Disassembly Procedure

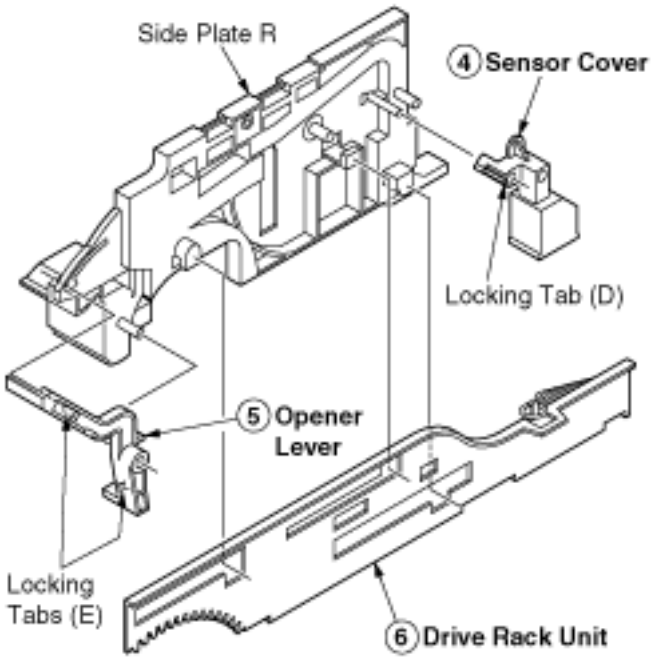
TOP PREVIOUS NEXT

5.3.2.1 Disassembly Procedure

TOP PREVIOUS NEXT

1. Remove the Sensor Cover by releasing Locking Tab (D).
2. Remove the Opener Lever by releasing 2 Locking Tabs (E). Then remove the Drive Rack Unit.

Fig. K2



TOP PREVIOUS NEXT

6 ADJUSTMENT PROCEDURES

TOP PREVIOUS NEXT

6.1 SERVICE FIXTURES AND TOOLS

6.2 MECHANICAL ADJUSTMENT

6.2.1 CLEANING PROCEDURE FOR THE UPPER CYLINDER UNIT

6.2.2 ADJUSTMENT PROCEDURES

6.2.2.1 TENSION POST ADJUSTMENT

6.2.2.2 BACK TENSION CONFIRMATION

6.2.2.3 FG HEAD GAP ADJUSTMENT

6.2.2.4 P2 AND P3 POST HEIGHT ADJUSTMENT (PRELIMINARY ADJUSTMENT)

6.2.2.5 TAPE INTERCHANGEABILITY ADJUSTMENT (FINAL ADJUSTMENT)

6.2.2.5.1 ENVELOPE OUTPUT ADJUSTMENT

6.2.2.5.2 AUDIO CONTROL HEAD TILT ADJUSTMENT

6.2.2.5.3 AUDIO CONTROL HEAD HEIGHT ADJUSTMENT

6.2.2.5.4 AUDIO CONTROL HEAD AZIMUTH ADJUSTMENT

6.2.2.5.5 AUDIO CONTROL HEAD HORIZONTAL POSITION ADJUSTMENT

6.3 ELECTRICAL ADJUSTMENT

6.3.1 TEST EQUIPMENT

6.3.2 HOW TO READ THE ADJUSTMENT PROCEDURES

6.3.3 PG SHIFTER ADJUSTMENT

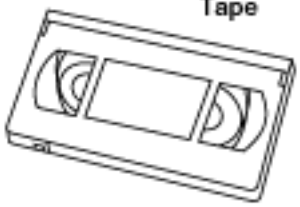
6.4 TEST POINTS AND CONTROL LOCATION

TOP PREVIOUS NEXT

6.1 SERVICE FIXTURES AND TOOLS

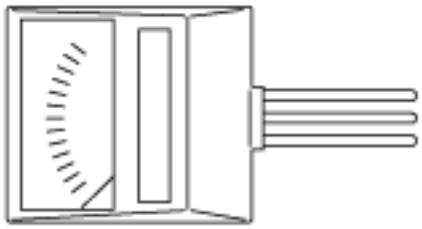
TOP PREVIOUS NEXT

VFMS0003H6 VHS Alignment Tape

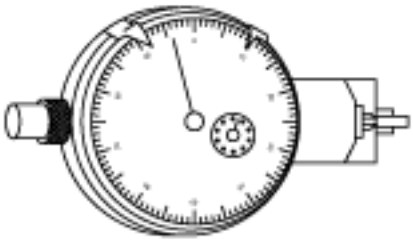


Video	Color Bar & Monoscope
Audio	6kHz(MONO)

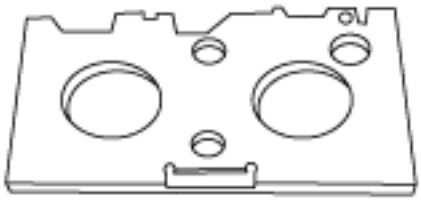
Back Tension Meter (Made in USA., Purchase Locally)



VFKS0009 Reel Table Height Fixture



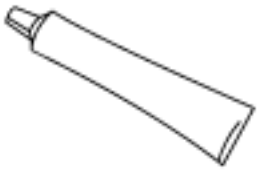
VFKS0010 Post Adjustment Plate



VFKS0081 Grease

VFK0329 Post Adjustment Driver

VFK1301 Silicon Grease

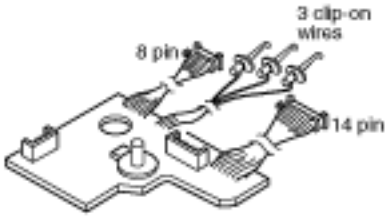


VFK27 Head Cleaning Stick

VFK0330 H-Position Adjustment Driver

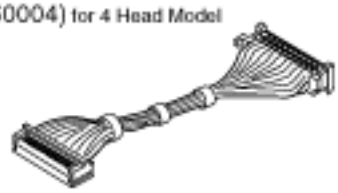
VUZS0002 Extension Cable Kit

Mode Select SW. Ass'y (VUVS0001)



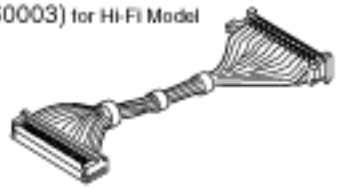
Extension Cable -1 (VUVS0002)

Extension Cable -2 (VUVS0004) for 4 Head Model



Extension Cable -2 (VUVS0005) for 2 Head Model

Extension Cable -2 (VUVS0003) for Hi-Fi Model



TOP PREVIOUS NEXT

6.2 MECHANICAL ADJUSTMENT

TOP PREVIOUS NEXT

6.2.1 CLEANING PROCEDURE FOR THE UPPER CYLINDER UNIT

6.2.2 ADJUSTMENT PROCEDURES

6.2.2.1 TENSION POST ADJUSTMENT

6.2.2.2 BACK TENSION CONFIRMATION

6.2.2.3 FG HEAD GAP ADJUSTMENT

6.2.2.4 P2 AND P3 POST HEIGHT ADJUSTMENT (PRELIMINARY ADJUSTMENT)

6.2.2.5 TAPE INTERCHANGEABILITY ADJUSTMENT (FINAL ADJUSTMENT)

6.2.2.5.1 ENVELOPE OUTPUT ADJUSTMENT

6.2.2.5.2 AUDIO CONTROL HEAD TILT ADJUSTMENT

6.2.2.5.3 AUDIO CONTROL HEAD HEIGHT ADJUSTMENT

6.2.2.5.4 AUDIO CONTROL HEAD AZIMUTH ADJUSTMENT

6.2.2.5.5 AUDIO CONTROL HEAD HORIZONTAL POSITION ADJUSTMENT

TOP PREVIOUS NEXT

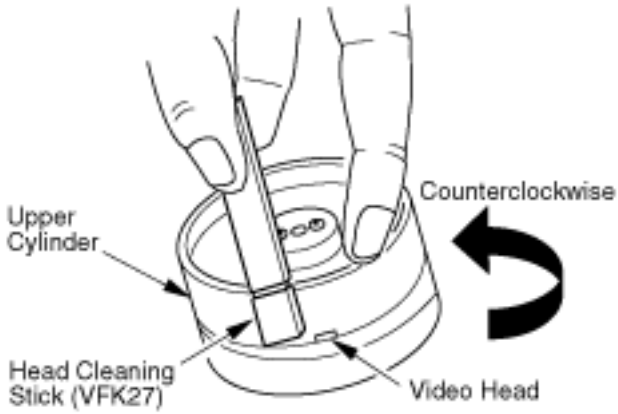
6.2.1 CLEANING PROCEDURE FOR THE UPPER CYLINDER UNIT

TOP PREVIOUS NEXT

1. While slowly turning the Upper Cylinder Unit counterclockwise by hand, gently rub the Video Heads with a Head Cleaning Stick (VFK27) moistened with Ethanol.

   When using a Cleaning Cassette, make sure to use "DRY" type only and be aware that excessive use can shorten head life.

Fig. M1



Note:

A. Do not rub vertically or apply excess pressure to the Video Heads.

   Do not turn the Upper Cylinder Unit clockwise while cleaning.

B. After cleaning, use a Dry Head Cleaning Stick (VFK27) to remove any Ethanol remaining on the cylinder tape path. Otherwise, tape damage will occur.

TOP PREVIOUS NEXT

6.2.2 ADJUSTMENT PROCEDURES

TOP PREVIOUS NEXT

6.2.2.1 TENSION POST ADJUSTMENT

6.2.2.2 BACK TENSION CONFIRMATION

6.2.2.3 FG HEAD GAP ADJUSTMENT

6.2.2.4 P2 AND P3 POST HEIGHT ADJUSTMENT (PRELIMINARY ADJUSTMENT)

6.2.2.5 TAPE INTERCHANGEABILITY ADJUSTMENT (FINAL ADJUSTMENT)

6.2.2.5.1 ENVELOPE OUTPUT ADJUSTMENT

6.2.2.5.2 AUDIO CONTROL HEAD TILT ADJUSTMENT

6.2.2.5.3 AUDIO CONTROL HEAD HEIGHT ADJUSTMENT

6.2.2.5.4 AUDIO CONTROL HEAD AZIMUTH ADJUSTMENT

6.2.2.5.5 AUDIO CONTROL HEAD HORIZONTAL POSITION ADJUSTMENT

TOP PREVIOUS NEXT

6.2.2.1 TENSION POST ADJUSTMENT

TOP PREVIOUS NEXT

- Purpose:

  To maintain a constant tape tension so that the tape runs with stability by performing preliminary adjustment.

- Symptom of Misadjustment:

  1) If the adjusted value is below the specification, the tape tension is not sufficient, thus causing a tape slack.

  2) If the adjusted value is above the specification, the tape tension is too high, thus causing tape damage.

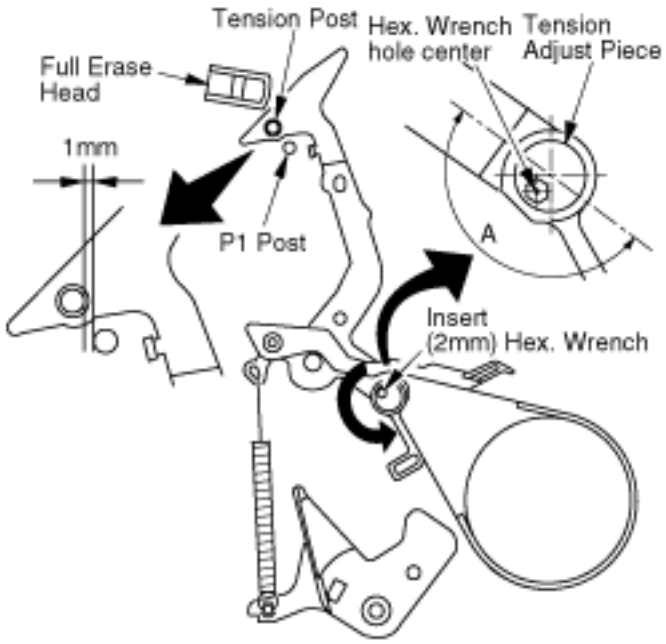
- Equipment Required:

  2 mm Hex. Wrench (Purchase Locally)

1. Remove the Cassette Up Ass´y.
2. Plug the AC plug into an AC outlet.
3. Place the unit in the Service Mode. Refer to " SERVICE MODE " in the "Service Notes" section of this manual.

   The power comes on and the unit goes into the PLAY Mode.
4. Using a (2 mm) Hex. Wrench, adjust the nut on the Tension Adjust Piece (counterclockwise only) so that there is a space of 1 mm between the left edge of the P1 Post and the right edge of the Tension Post. Make sure that the center of the Hex.Wrench hole is within Area "A".
5. After adjustment, remove the Hex. Wrench.
6. Press the STOP/EJECT button to place the unit in the EJECT Mode.
7. Release the unit from the Service Mode. Refer to " SERVICE MODE " in the "Service Notes" section of this manual.

Fig. M2



TOP PREVIOUS NEXT

6.2.2.2 BACK TENSION CONFIRMATION

TOP PREVIOUS NEXT

- Purpose:

  To fine adjust the Back Tension so that the tape runs smoothly with a constant tension.

- Symptom of Misadjustment:

  1) If the tape tension is less than the specified value, the tape cannot come into proper contact with the Video Heads, resulting in poor picture playback.

  2) If the tape tension is too high, the tape will soon be damaged.

Measurement Procedure

- Equipment Required:

  Back Tension Meter (Made in U.S.A., Purchase Locally)

  VHS Cassette Tape (120-Minute Tape)

- Specification

  25 +/- 2.5g

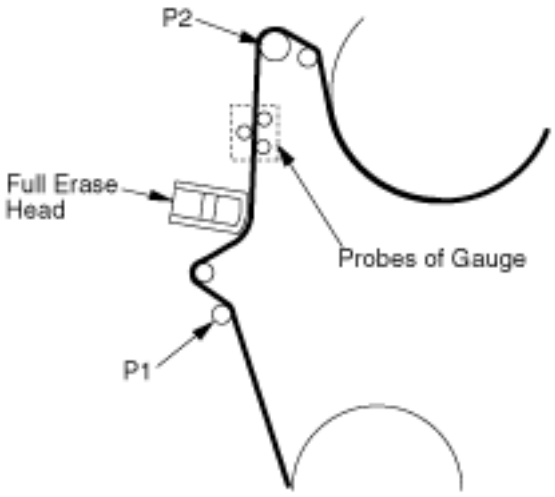
1. Play back a T120 cassette tape from the beginning for approx. 10 to 20 seconds to stabilize tape movement.

2. Insert a Tension Meter into tape path and measure the back tension.

3. If the reading is out of specification, make sure that there is no dust or foreign material between the Tension Band of Tension Arm Unit and the Reel Table.

   If cleaning does not correct the tension measurement, replace the Tension Spring and the Tension Arm Unit.

Fig. M3-1

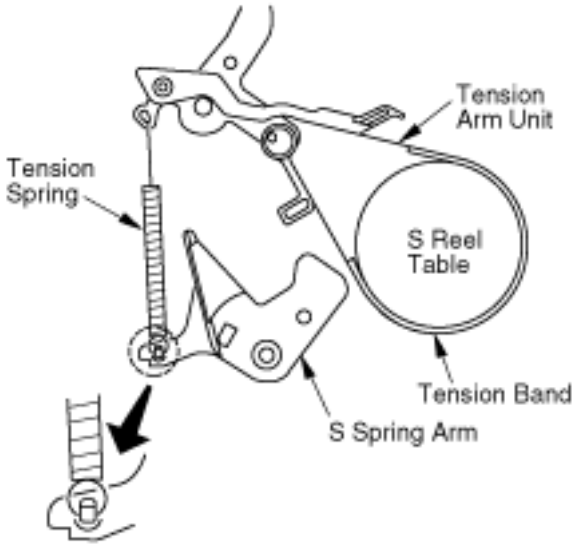


Note:

1) Be sure that the three probes of the meter are all in solid contact with the tape, but not touching any other parts of the mechanism.

2) It is recommended that measurements be repeated at least three (3) times because the tension meter is very sensitive to external vibrations.

Fig. M3-2



TOP PREVIOUS NEXT

6.2.2.3 FG HEAD GAP ADJUSTMENT

TOP PREVIOUS NEXT

- Purpose:

  To properly pick up the FG Signal.

- Symptom of Misadjustment:

  If the FG Signal is not properly picked up, Servo Operation cannot be achieved.

- Equipment Required:

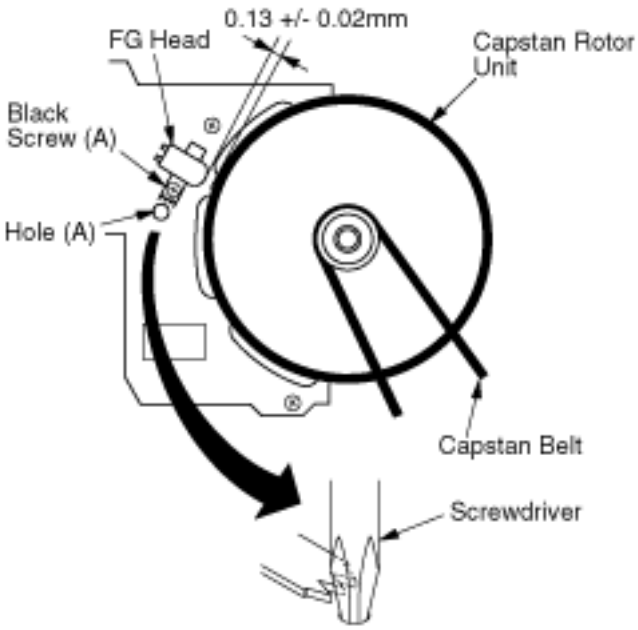
  Oscilloscope

- Specification

  0.13 +/- 0.02mm

1. Remove the VCR Chassis Unit and then place it upside down.
2. Remove the Main C.B.A.
3. Slightly loosen Black Screw (A). Then set the Screwdriver (#1 or #2 Phillips Driver) into the Hole (A). Turn the screwdriver counterclockwise until the FG Head touches the rotor. Then turn it slightly clockwise to the clearanceas specified.
4. Tighten Black Screw (A).
5. Reinstall the Main C.B.A.

Fig. M4



Note:

Do not touch the outside circumference of the rotor surface with any tool and keep magnetic material away from the rotor magnet (especially metal particles).

Confirmation of Signal Level

1. Supply a Video Signal to the Video Input Jack.
2. Insert a cassette tape and place the unit in SLP recording mode.
3. Connect the oscilloscope to Pin 7 of P2502 on the Capstan Stator Unit.

   Confirm that the signal level is greater than 15mVp-p.

TOP PREVIOUS NEXT

6.2.2.4 P2 AND P3 POST HEIGHT ADJUSTMENT (PRELIMINARY ADJUSTMENT)

TOP PREVIOUS NEXT

- Purpose:

  To properly align the position of the tape with the Cylinder Lead so that the tape runs with stability.

- Symptom of Misadjustment:

  Since the Envelope Waveform Signal cannot be tracked properly, the Playback picture will be poor.

  Since the tape does not run smoothly, the tape will

  eventually be damaged.

  Tape interchangeability is poor.

- Equipment Required:

  Post Adjustment Plate (VFKS0010)

  Reel Table Height Fixture (VFKS0009)

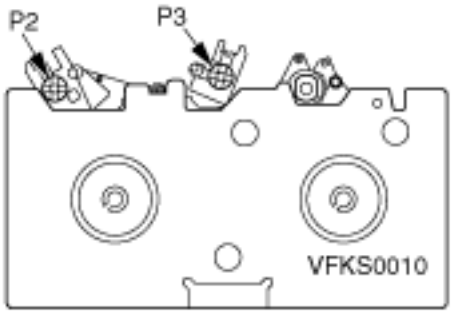
  Post Adjustment Driver (VFK0329)

1. Remove the Cassette Up Ass´y.

2. Position the Post Adjustment Plate over the reels.

3. Place the fixture on the Post Adjustment Plate and zero the fixture (DO NOT use the cut-out portion of the post adjustment plate.)

Fig. M5-1



4. Lower each post below the top edge of the Post Adjustment Plate. Then, raise each post until it contacts the foot of the Reel Table Height Fixture. For proper adjustment, the foot of that should be positioned as shown.

Fig. M5-2

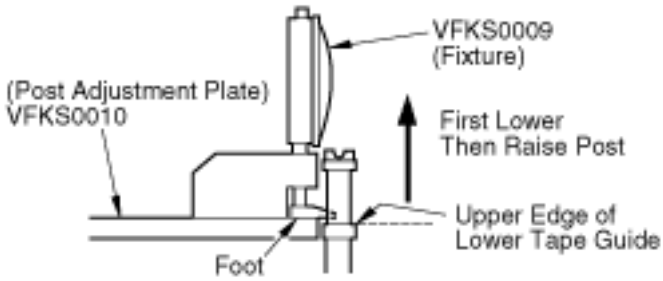
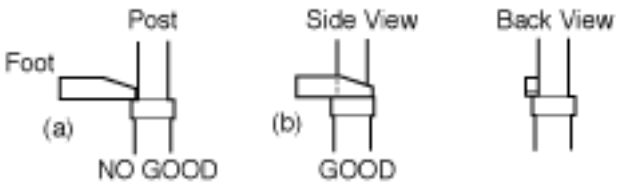


Fig. M5-3



CAUTION:

1. Overtightening P2 and P3 posts may cause the threads to strip.

2. Upon completion of this procedure, perform the " ENVELOPE OUTPUT ADJUSTMENT " procedures.

TOP PREVIOUS NEXT

6.2.2.5 TAPE INTERCHANGEABILITY ADJUSTMENT (FINAL ADJUSTMENT)

TOP PREVIOUS NEXT

Note:

To perform these adjustment/confirmation procedures, set the tracking to the neutral position.

- Equipment Required:

  Dual Trace Oscilloscope

  VHS Alignment Tape (VFMS0003H6)

  Post Adjustment Driver (VFK0329)

  H-Position Adjustment Driver (VFK0330)

6.2.2.5.1 ENVELOPE OUTPUT ADJUSTMENT

6.2.2.5.2 AUDIO CONTROL HEAD TILT ADJUSTMENT

6.2.2.5.3 AUDIO CONTROL HEAD HEIGHT ADJUSTMENT

6.2.2.5.4 AUDIO CONTROL HEAD AZIMUTH ADJUSTMENT

6.2.2.5.5 AUDIO CONTROL HEAD HORIZONTAL POSITION ADJUSTMENT

TOP PREVIOUS NEXT

6.2.2.5.1 ENVELOPE OUTPUT ADJUSTMENT

TOP PREVIOUS NEXT

- Purpose:

  To achieve a satisfactory picture and secure precise tracking.

- Symptom of Misadjustment:

  If the envelope is output poorly, much noise will appear in the picture. Then the tracking will lose precision and the playback picture will be distorted by any slight variation of the tracking control circuit.

- Equipment Required:

  Post Adjustment Driver (VFK0329)

1. Connect the oscilloscope to TP3002 on the Video Signal Process Section of the Main C.B.A. Use TP6205 as a trigger.

2. Place a jumper between TP6003 on the Video Signal Process Section and +5V(TP6009) on the System Control Section of the Main C.B.A. to defeat Auto Tracking.

3. Eject the tape and insert it again to access the Neutral Tracking position.

4. Play back the alignment tape and confirm that the RF envelope appears.

5. With Post Adjust Driver, adjust P2 and P3 post height so that the envelope waveform (V1/V-max. is 0.7 or more.) becomes as flat as possible (No envelope drop). If the envelope drop appears on the left-half of the waveform, adjust P2post height. If the envelope drop appears on the right-half of the waveform, adjust P3 post height.

Fig. M6-1

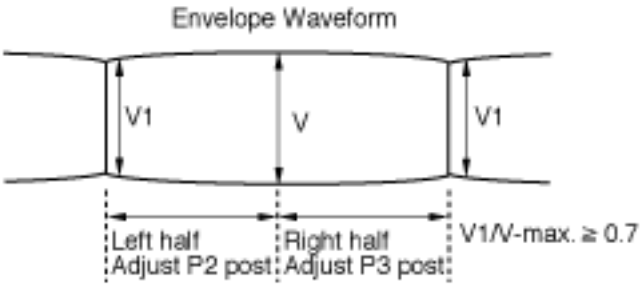
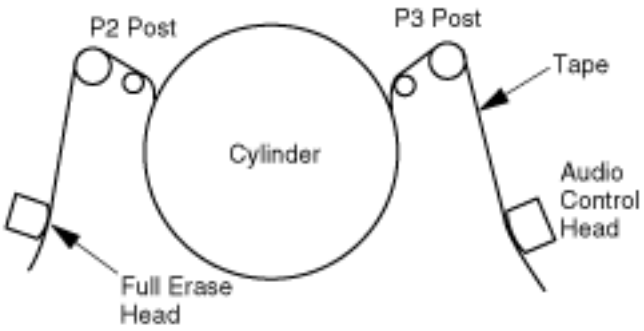


Fig. M6-2



Note:

To confirm adjustment, press the Tracking Control Up or Down button on remote control. Make sure that the envelope waveform remains flat. If not, readjust P2 and/or P3 post heights.

6. After adjustment, confirm that the tape travels without curling at P2 and P3 posts.

7. Remove the jumper after completing the adjustment procedure.

Fig. M6-3

Note:

Overtightening P2 and P3 posts may cause the threads to strip.

TOP PREVIOUS NEXT

6.2.2.5.2 AUDIO CONTROL HEAD TILT ADJUSTMENT

TOP PREVIOUS NEXT

- Purpose:

  To confirm that the tape runs smoothly. In particular, confirm that the tape properly picks up the Audio Signal at the upper part of the head and the Control Signal at the lower part of the head.

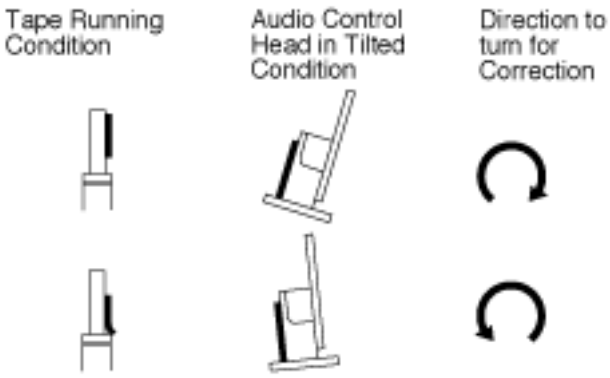
- Symptom of Misadjustment:

  If the tilt of the Audio Control Head is poorly adjusted, the tape will eventually be damaged. An intermittent Blue screen may be seen in Playback.

1. Play back a T120 cassette tape and check that the tape travels smoothly between the upper and lower guides of the P4 post.

2. If necessary, adjust Black Screw (B) clockwise until the tape begins to curl at the lower edge of the P4 post. Then adjust the screw counterclockwise until the curling is eliminated.

Fig. M7



TOP PREVIOUS NEXT

6.2.2.5.3 AUDIO CONTROL HEAD HEIGHT ADJUSTMENT

TOP PREVIOUS NEXT

The height of the Audio Control Head replacement part is preset at the factory.

- Purpose:

  To be sure the tape runs properly along the Control Head.

- Symptom of Misadjustment:

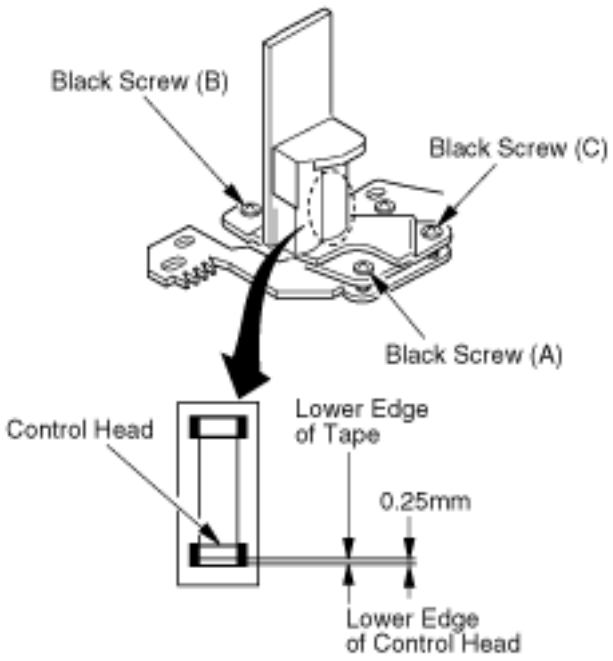
  If the control signal is not properly picked up, Servo Operation cannot be achieved. A Blue screen will be seen in Playback.

This confirmation is required when the Audio Control Head is replaced.

1. Play back a T120 cassette tape and check that the lower edge of the tape runs approximately 0.25 mm above the lower edge of the Audio Control Head.

2. If necessary, adjust Black Screws (A) and (B) clockwise to lower the tape or counterclockwise to raise.

Fig. M8



TOP PREVIOUS NEXT

6.2.2.5.4 AUDIO CONTROL HEAD AZIMUTH ADJUSTMENT

TOP PREVIOUS NEXT

- Purpose:

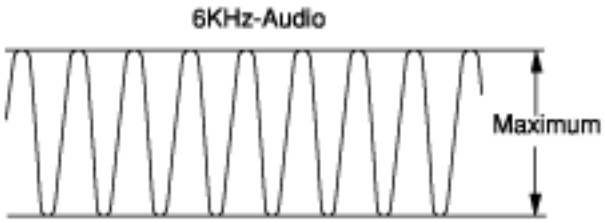
  To adjust the position and height of the Audio Control Head so that it meets the tape tracks properly.

- Symptom of Misadjustment:

  If the position of the Audio Control Head is not properly adjusted, the Audio S/N Ratio is poor.

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Play back the 6kHz Monaural Audio portion of the alignment tape.
3. Adjust Black Screw (C) on the Audio Control Head base so that the output level is at maximum.

Fig. M9



4. Confirm the height of the Audio Control Head is proper. If not, readjust Black Screws (A) and (B).

TOP PREVIOUS NEXT

6.2.2.5.5 AUDIO CONTROL HEAD HORIZONTAL POSITION ADJUSTMENT

TOP PREVIOUS NEXT

- Purpose:

  To adjust the Horizontal Position of the Audio Control Head.

- Symptom of Misadjustment:

  If the Horizontal Position of the Audio Control Head is not properly adjusted, a maximum envelope cannot be obtained at the Neutral Position of the Tracking Control Circuit.

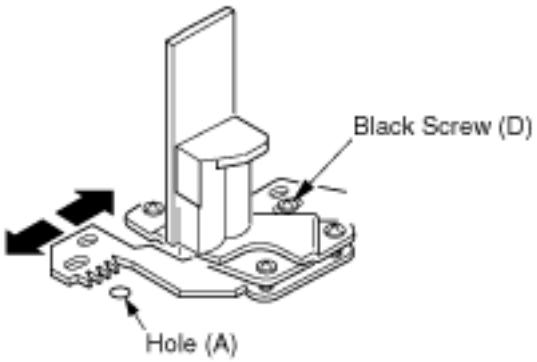
1. Connect the oscilloscope to TP3002 on the Video Signal Process Section of the Main C.B.A. Use TP6205 as a trigger.
2. Place a jumper between TP6003 on the Video Signal Process Section and +5V(TP6009) on the System Control Section of the Main C.B.A. to defeat Auto Tracking.
3. Eject the tape and insert it again to access the Neutral Tracking position.
4. Play back the alignment tape and confirm that the RF envelope appears.
5. If adjustment is required, loosen the Black Screw (D) and tighten it lightly. Set the H-Position Adjustment Driver into the Hole (A). Then slowly turn the fixture either clockwise or counterclockwise so that the envelope is at maximum.
6. Before finding the center of the maximum period of the envelope, rotate the fixture back and forth slightly to confirm the limits on either side of the maximum period.
7. Push the Tracking Control Up Button (on the Remote Control) several times (count the number of times pushed) until the maximum envelope is reduced to 1/2.
8. Reset the tracking to the neutral position by ejecting the tape and reinserting it. Push the Tracking Control Down Button (on the Remote Control) several times (count the number of times pushed) until the maximum envelope is reduced to 1/2.
9. If the number of pushing is not the same, then loosen the Black Screw (D) and set the H-Position Adjustment Driver into the Hole (A) to find the center point. Then repeat the above procedure to determine the center point.

10. Tighten Black Screw (D).

    (The Black Screw (D) should be in the approximate center of the hole.)

11. Remove the jumper between TP6003 and +5V(TP6009).

Fig. M10



Note:

Old type of H-Position Adjustment Driver (VFK0136) can be used for this adjustment.

TOP PREVIOUS NEXT

6.3 ELECTRICAL ADJUSTMENT

TOP PREVIOUS NEXT

6.3.1 TEST EQUIPMENT

6.3.2 HOW TO READ THE ADJUSTMENT PROCEDURES

6.3.3 PG SHIFTER ADJUSTMENT

TOP PREVIOUS NEXT

6.3.1 TEST EQUIPMENT

TOP PREVIOUS NEXT

To do all of these electrical adjustments, the following equipment is required.

1. Dual-Trace Oscilloscope

   Voltage Range: 0.001 to 50V/Div.

   Frequency Range: DC to 50MHz

   Probes: 10:1, 1:1

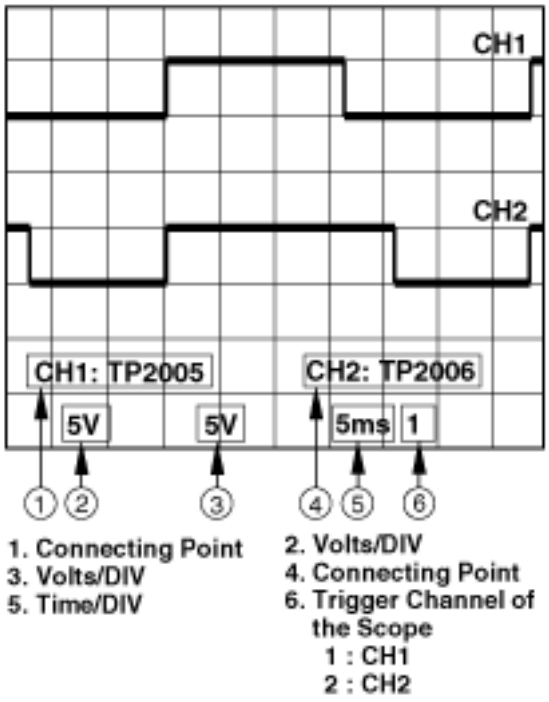
2. NTSC Video Pattern Generator
3. Color TV Receiver or Monitor
4. Plastic Tip Driver and Non-Metal Driver
5. Isolation Transformer (Variable)
6. VHS Alignment Tape (VFMS0003H6)

TOP PREVIOUS NEXT

6.3.2 HOW TO READ THE ADJUSTMENT PROCEDURES

TOP PREVIOUS NEXT

Fig. E1



TOP PREVIOUS NEXT

6.3.3 PG SHIFTER ADJUSTMENT

TOP PREVIOUS NEXT

- Purpose:

  Determine the Video Head Switching Point during Playback.

- Symptom of Misadjustment:

  May cause Head Switching Noise and/or Vertical Jitter.

- Test Point:

  TP3001 (Main C.B.A.)

  TP6205 (Main C.B.A.)

- Adjustment:

  R6201 (Main C.B.A.)

- Specification:

  T = 6 +/- 1H (0.38 +/- 0.06msec.)

- Mode:

  SP Playback

- Equipment:

  Oscilloscope,

  VHS Alignment Tape (VFMS0003H6)

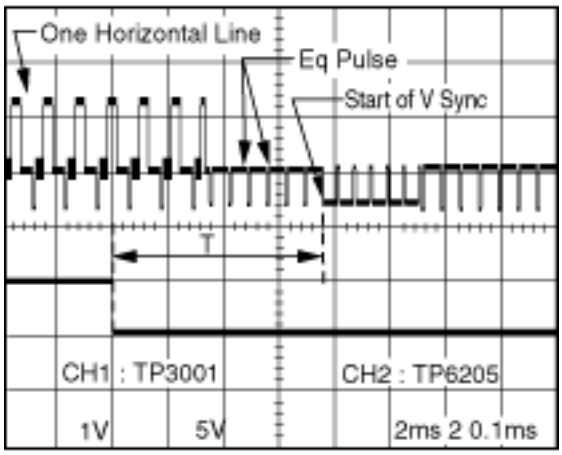
1. Connect the channel-1 scope probe to TP3001 and the channel-2 scope probe to TP6205. Trigger from channel-2.

2. Playback the VHS alignment tape, and then connect TP6003 to GND to be in PG Shifter Adjustment mode.

3. Adjust the R6201 (PG SHIFTER) so that the trailing edge of the head switching pulse is placed 6H +/- 1H (0.38 +/- 0.06msec.) before the start of the vertical sync pulse.

4. Disconnect TP6003 and GND to set the adjustment value of PG Shifter.

Fig. E2

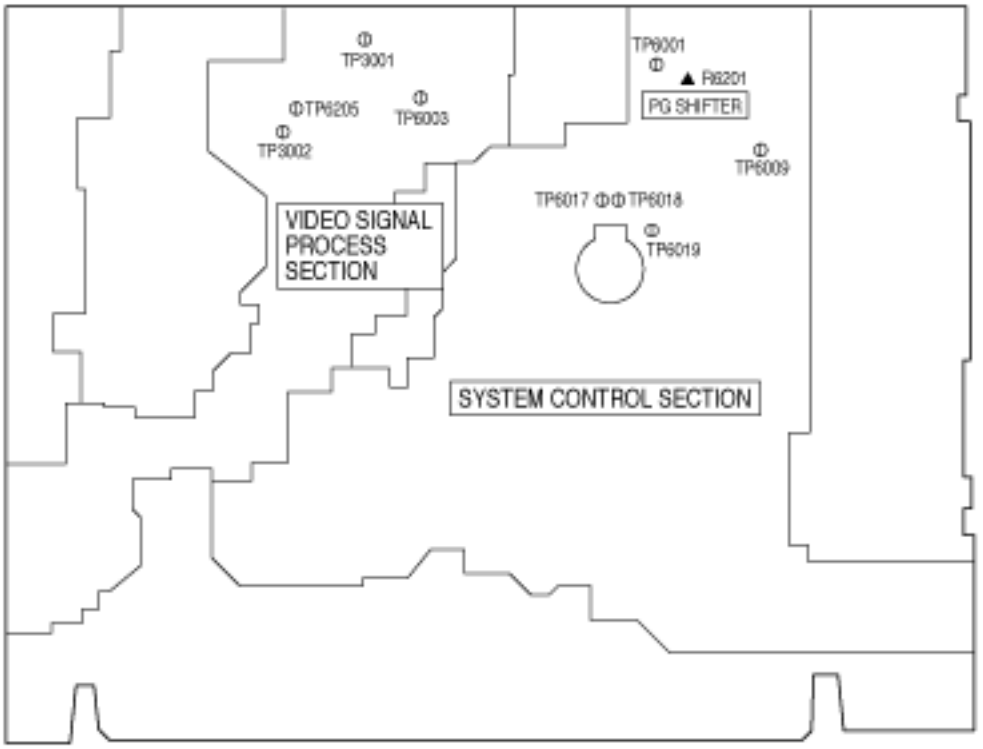


TOP PREVIOUS NEXT

6.4 TEST POINTS AND CONTROL LOCATION

TOP PREVIOUS NEXT

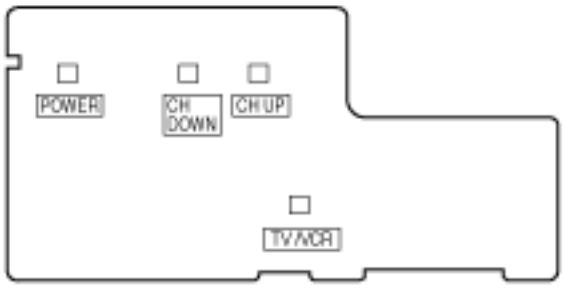
Main C.B.A.



(Component Side)

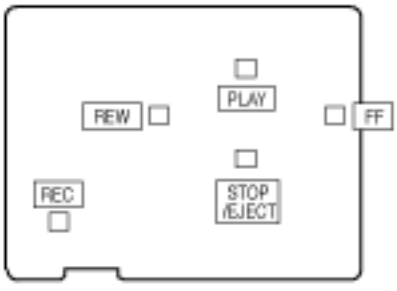
FUNCTION OF IMPORTANT TEST POINTS		
TP3001	Video Signal to Jack	
TP3002	REC/PB Video envelope signal	
TP6001	Service Test Point (inhibit sensors)	
TP6003	defeat Auto tracking function (connect to +5V(TP6009))	
	PG Shifter Adjustment Mode (connect to GND)	
TP6009	+5V	
TP6205	Head SW.	
TP6017	Mode Select SW. Position	Mode Position (A)
TP6018		Mode Position (B)
TP6019		Mode Position (C)

Operation I C.B.A.



(Component Side)

Operation II C.B.A.



(Component Side)

Test Point Information

① Test Point with a jumper wire across a hole in the P.C.B.

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7 SCHEMATIC DIAGRAMS

TOP PREVIOUS NEXT

7.1 SCHEMATIC DIAGRAMS AND CIRCUIT BOARD LAYOUT NOTES

7.2 MAIN I (SYSTEM CONTROL/ SERVO) SCHEMATIC DIAGRAM

7.3 MAIN II (SIGNAL PROCESS/ AUDIO) SCHEMATIC DIAGRAM

7.4 MAIN III (POWER SUPPLY) SCHEMATIC DIAGRAM

7.5 MAIN IV (Hi-Fi) SCHEMATIC DIAGRAM

7.6 MAIN V (OPERATION)/ OPERATION II SCHEMATIC DIAGRAM (A)

7.7 MAIN V (OPERATION)/ OPERATION II SCHEMATIC DIAGRAM (B)

7.8 MAIN VI (ADVANCE) SCHEMATIC DIAGRAM (B)

7.9 OPERATION I SCHEMATIC DIAGRAM

7.10 Hi-Fi AUDIO/ VIDEO HEAD AMP SCHEMATIC DIAGRAM

7.11 CAPSTAN STATOR/ JUNCTION/ LOADING MOTOR/ AUDIO CONTROL HEAD SCHEMATIC DIAGRAM

7.12 INTERCONNECTION SCHEMATIC DIAGRAM

7.13 SIGNAL WAVEFORM

7.14 VOLTAGE CHART

TOP PREVIOUS NEXT

7.1 SCHEMATIC DIAGRAMS AND CIRCUIT BOARD LAYOUT NOTES

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

7.2 MAIN I (SYSTEM CONTROL/ SERVO) SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

7.3 MAIN II (SIGNAL PROCESS/ AUDIO) SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

7.4 MAIN III (POWER SUPPLY) SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

7.5 MAIN IV (Hi-Fi) SCHEMATIC DIAGRAM

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

7.6 MAIN V (OPERATION)/ OPERATION II SCHEMATIC DIAGRAM (A)

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

7.7 MAIN V (OPERATION)/ OPERATION II SCHEMATIC DIAGRAM (B)

TOP PREVIOUS NEXT

TOP PREVIOUS NEXT

7.8 MAIN VI (ADVANCE) SCHEMATIC DIAGRAM (B)

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8.2 MAIN (POWER SUPPLY/ SIGNAL PROCESS/ AUDIO/ Hi-Fi AUDIO/ SYSTEM CONTROL/ SERVO/ OPERATION) C.B.A. VEPS6055HA(B)

8.3 OPERATION I C.B.A. VEPS8052A (A)/ VEPS8052B (B)

8.4 OPERATION II C.B.A. VEPS8053A

8.5 Hi-Fi AUDIO/ VIDEO HEAD AMP C.B.A. VEPS5019A

8.6 CAPSTAN STATOR/ JUNCTION C.B.A./ LOADING MOTOR P.C.B./ AUDIO CONTROL HEAD P.C.B.

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8.2 MAIN (POWER SUPPLY/ SIGNAL PROCESS/ AUDIO/ Hi-Fi AUDIO/ SYSTEM CONTROL/ SERVO/ OPERATION) C.B.A. VEPS6055HA(B)

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8.3 OPERATION I C.B.A. VEPS8052A (A)/ VEPS8052B (B)

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8.4 OPERATION II C.B.A. VEPS8053A

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9.6 SERVO BLOCK DIAGRAM

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9.7 OPERATION BLOCK DIAGRAM

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10.1 MECHANISM (TOP) SECTION

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10.2 MECHANISM (BOTTOM) SECTION

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11 REPLACEMENT PARTS LIST

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BEFORE REPLACING PARTS, READ THE FOLLOWING:

11.1 REPLACEMENT NOTES

11.1.1 General Notes

11.1.2 Mechanical Replacement Notes

11.1.3 Electrical Replacement Notes

11.2 MECHANICAL REPLACEMENT PARTS LIST

11.3 ELECTRICAL REPLACEMENT PARTS LIST

11.3.1 MAIN C.B.A. (A)

11.3.2 MAIN C.B.A. (B)

11.3.3 OPERATION I C.B.A.

11.3.4 OPERATION II C.B.A.

11.3.5 Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.

11.3.6 JUNCTION C.B.A.

11.3.7 ELECTRICAL PARTS LOCATED ON CHASSIS

11.3.8 SUMMARY OF "E" ITEM NUMBERS

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11.1 REPLACEMENT NOTES

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11.1.1 General Notes

11.1.2 Mechanical Replacement Notes

11.1.3 Electrical Replacement Notes

TOP PREVIOUS NEXT

11.1.1 General Notes

TOP PREVIOUS NEXT

1. Use only original replacement parts:

   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list.

2. IMPORTANT SAFETY NOTICE

   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components, use only the specified parts.

3. SPECIAL NOTE

   All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.

4. Parts with no Ref. No. in "EXPLODED VIEW" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.

5. Parts different in shape or size may be used. However, only interchangeable parts will be supplied as service replacement parts.

6. The parts which "MKA" is indicated in Remarks column will be supplied from MKA factory.

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11.1.2 Mechanical Replacement Notes

TOP PREVIOUS NEXT

1. Section No. of parts shown in Exploded Views are indicated in the Remarks column.

2. Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as Capstan Rotor Kit (Ref. No. 51) only.

3. Capstan Stator Unit, Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Stator Kit (Ref. No. 52) only. However, IC2501 (AN3845SC) is available separately as a replacement part. When installing the IC2501 or CapstanStator unit, be sure to apply Silicon Grease (VFK1301). Refer to " Junction C.B.A., Capstan Stator Unit, Sub Rotor, and PCB Holder " of "DISASSEMBLY/ASSEMBLY PROCEDURES OF MECHANISM" section.

4. Main Cam Gear is supplied as a Main Cam Gear Kit only. Main Cam Gear Kit consists of a Main Cam Gear and a Main Cam Push Nut. However, Main Cam Push Nut is available separately as a replacement part.

5. Since the UHF/VHF TUNER/TV DEMODULATOR UNIT (Ref. No. E21) has already been pre-adjusted at the factory, do not try to adjust the UHF/VHF TUNER/TV DEMODULATOR UNIT. The UHF/VHF TUNER/TV DEMODULATORUNIT replacement part is available as a complete assembly unit only.

6. The Infrared Remote Control Unit (Ref. No. 123) replacement part is available as a complete assembly unit only. Do not try to disassemble the Infrared Remote Control Unit. However, the battery cover is available separately as a replacement part.

7. Cut Washers (Ref. No. 417 and 441) are not reusable.

   If removed, install a new one.

8. Main Cam Push Nut (Ref. No. 414) is not reusable.

   If removed, install a new one.

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11.1.3 Electrical Replacement Notes

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1. Item numbers with capital letter E (Example: E1, E2,...) in the Ref. No. column are shown in the exploded views.

2. The parts with " " mark are supplied individually or as a unit. The parts with "▴" mark are supplied individually or as a unit, and are included in " " parts listed directly above in the parts list.

3. Unless otherwise specified;

   All resistors are in ohms, 1/4W, +/-5%, carbon, K = 1,000 ohm, M = 1,000 kohm.

   All capacitors are in microfarads, P = micromicrofarad, +/-10%.

   All coils are in microhenries, M = 1,000 microhenry, +/-10%.

4. Abbreviation

   - RTL:

     Retention Time Limited

     This indicates that the retention time is limited for this item. After the discontinuation of this item in production, it will no longer be available.

   NR: Non Repairable Board Ass´y

   MGF CHIP: Metal Glaze Film Chip

   C CHIP: Ceramic Chip

   COMPLX CMP: Complex Component

   W FLMPRF: Wirewound Flameproof

   C.B.A.: Circuit Board Assembly

   P.C.B.: Printed Circuit Board

E.S.D.: Electrostatically Sensitive Devices

5. SERVICE OF CHIP PARTS

   When servicing chip parts, please use a soldering iron of less than 30 watts. Refer to " IC, TRANSISTOR AND CHIP PART INFORMATION " page.

6. The parts with "•" are 0 ohm resistor. When replacing, a wire can be substituted for a 0 ohm resistor.

7. IC6301 replacement note:

   The manufacturing part number is TMP47C216FF917. However, to order the part, use service order part number T47C216FF917.

COMPARISON CHART MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B

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11.2 MECHANICAL REPLACEMENT PARTS LIST

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MECHANISM PARTS ON CHASSIS

Ref. No.	Part No.	Part Name & Description	Remarks
			(Section No.)
1	VBSS0033	FULL ERASE HEAD	1
2	VXKS0867	MOTOR BLOCK ASS´Y	1
	OR VXKS0876		
3	VDBS0349	TENSION ARM BOSS	1
4	VDBS0351	S BRAKE ARM BOSS	1
5	VMDS0971	OPENER PIECE	1
6	VDGS0428	WORM WHEEL GEAR	1
7	VDGS0429	INTERMEDIATE GEAR	1
8	VVGS0008	MAIN CAM GEAR KIT	1
9	VDRS0056	S REEL TABLE	1
10	VDRS0057	T REEL TABLE	1
11	VEGS0408	CYLINDER UNIT	1
12	VEHS0569	AUDIO CONTROL/ERASE HEAD UNIT	1
13	VEHS0567	UPPER CYLINDER UNIT	1
14	VJSS0882	CONNECTOR 8P	1
15	VJWS6LB100LL	COMMU CABLE W/OUT PLUG	1
16	VXDS0198	LOADING POST BASE-S UNIT	1
17	VXDS0195	LOADING POST BASE-T UNIT	1
18	VXLS1078	PINCH ARM UNIT	1
19	VMLS0978	MAIN LEVER DRIVE ARM	1
20	VXLS1063	P5 ARM UNIT	1
21	VMLS0976	DRIVE RACK ARM	1
22	VMLS0972	CHANGING LEVER A	1
23	VMLS0977	MAIN LEVER	1
24	VXLS1072	LOADING RACK UNIT	1
25	VXLS1061	S BRAKE ARM UNIT	1

26	VMLS0982	S SPRING ARM	1
27	VXLS1062	T BRAKE UNIT	1
28	VMBS1150	T BRAKE SPRING	1
29	VXLS1074	TENSION ARM UNIT	1
30	VMBS1164	TENSION SPRING	1
32	VXLS1080	CLEANER ARM UNIT	1
33	VDPS0269	CLEANER ROLLER	1
35	VKAS0047	RUBBER FOOT	4
38	VMBS1161	CASSETTE DOOR SPRING	4
41	VXPS0379	CENTER CLUTCH UNIT	2
42	VMBS1151	CHANGING GEAR SPRING	2
43	VDGS0425	CHANGING GEAR	2
44	VXLS1053	IDLER ARM UNIT	2
45	VMDS0985	PCB HOLDER	2
46	VMDS0982	MAIN LEVER GUIDE	2
47	VMLS0973	CHANGING LEVER B	2
49	VXLS1054	S LOADING ARM UNIT	2
50	VXLS1056	T LOADING ARM UNIT	2
51	VXPS0382K2	CAPSTAN ROTOR KIT	2
52	VEMS0316K2	CAPSTAN STATOR KIT	2
53	VBKS0040	FG HEAD	2
54	VDVS0087	CAPSTAN BELT SQUARE,ELASTOMER 2MM	2
55	VMAS2135	SUB ROTOR	2
56	VPFS0085	SHEET,POLYETHYLENE	5
57	VXBS0061	GROUNDING PLATE UNIT	2
58	VXLS1070	SS BRAKE ARM UNIT	2
59	VMBS1155	SS BRAKE SPRING	2
60	VMFS0311	CUSHION	3
61	VXYS1263	CASSETTE UP ASS´Y	3
62	VMAS2131	TOP PLATE	3
63	VMBS1159	GROUNDING SPRING	3
64	VMDS0990	SIDE PLATE L	3
65	VMDS0974	SIDE PLATE R	3
66	VMDS0979	SENSOR COVER	3
67	VMLS0993	OPENER LEVER	3

68	VXLS1064	DRIVE RACK UNIT	3
69	VXAS4404	HOLDER UNIT	3
70	VXLS1065	WIPER ARM UNIT	3
71		FRONT PANEL ASS´Y	
	VYPS7000	(A)	4
	VYPS7001	(B)	4
72		CASSETTE DOOR-LID UNIT	
	VYPS6912	(A)	4
	VYPS6920	(B)	4
73	VKMS2388	TOP COVER	4
74	VKUS0272	BOTTOM PANEL	4
75	VGPS4341	REAR PANEL	4
76	VMAS2136	CHASSIS ANGLE	4
100	VKFS2235	BATTERY COVER	5
101	VKAS0062	FOOT	4
121		PACKING CASE,PAPER	
	VPGS4407	(A)	5
	VPGS4408	(B)	5
122		FAN BAG	
	VQFS3517	(A)	5
	VQFS3518	(B)	5
123		INFRARED REMOTE CONTROL UNIT	
	VSQS1596	(A)	5
	VSQS1598	(B)	5
124	VJAS0212	VHF CONNECTING CABLE W/PLUG	5
125	VPNS0589	FRONT CUSHION,STYROFOAM	5
126	VPNS0592	REAR CUSHION,STYROFOAM	5

SCREWS AND WASHERS

Ref. No.	Part No.	Part Name & Description	Remarks
401	VHDS0475	SCREW,STEEL	1
404	VHDS0472	SCREW,STEEL	4
405	VHDS0496	SCREW W/WASHER,STEEL	4
407	XYN26+C5	SCREW W/WASHER,STEEL	2
408	XYN2+J5FZ	SCREW W/WASHER,STEEL	2
410	VHDS0498	SCREW W/WASHER,STEEL	1

413	VHDS0293	SCREW,STEEL	4
414	VHNS0070	MAIN CAM PUSH NUT,STEEL	1
417	VMXS0865	CUT WASHER,NYLON	1
424	XYC26+SF6J	SCREW W/WASHER,STEEL	1
425	XTB3+12A	TAPPING SCREW,STEEL	4
429	VHDS0491	SCREW W/WASHER,STEEL	1
430	XTV26+6FFZJ	TAPPING SCREW,STEEL	2
431	XTV26+6FJ	TAPPING SCREW,STEEL	2
435	XSN26+4	SCREW,STEEL	2
441	VMXS0499	CUT WASHER,NYLON	2
449	VHDS0493	TAPPING SCREW,STEEL	4
450	VHDS0309	SCREW,STEEL	4
456	VHDS0497	SCREW W/WASHER,STEEL	4
458	XTV3+8J	TAPPING SCREW,STEEL	4
460	XTN4+12A	TAPPING SCREW,STEEL	4
461	VHDS0460	SCREW,STEEL	4
462	XTN4+15AR	TAPPING SCREW,STEEL	4

SERVICE FIXTURES AND TOOLS

Ref. No.	Part No.	Part Name & Description	Remarks
	VFMS0003H6	VHS ALIGNMENT TAPE	
	VFKS0009	REEL TABLE HEIGHT FIXTURE	
	VFKS0010	POST ADJUSTMENT PLATE	
	VFKS0081	GREASE	
	VFK0329	POST ADJUSTMENT DRIVER	
	VFK1301	SILICON GREASE	
	VFK27	HEAD CLEANING STICK	
	VFK0330	H-POSITION ADJUSTMENT DRIVER	
	VUZS0002	EXTENSION CABLE KIT	
	VUVS0001	MODE SELECT SW ASS´Y	
	VUVS0002	EXTENSION CABLE -1	
	VUVS0003	EXTENSION CABLE -2	
		(FOR Hi-Fi MODEL)	
	VUVS0004	EXTENSION CABLE -2	
		(FOR 4 HEAD MODEL)	
	VUVS0005	EXTENSION CABLE -2	
		(FOR 2 HEAD MODEL)	

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11.3 ELECTRICAL REPLACEMENT PARTS LIST

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PRINTED CIRCUIT BOARD ASSEMBLY

Ref. No.	Part No.	Part Name & Description	Remarks
E1	VEPS6052HA	MAIN C.B.A.	E.S.D. RTL
	(A)		
E1	VEPS6055HA	MAIN C.B.A.	E.S.D. RTL
	(B)		
E4	VEPS8052A	OPERATION I C.B.A.	RTL
	(A)		
E4	VEPS8052B	OPERATION I C.B.A.	RTL
	(B)		
E5	VEPS8053A	OPERATION II C.B.A.	RTL
E6	VEPS5019A	Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.	RTL
E7	VEPS0A25A	JUNCTION C.B.A.	RTL

11.3.1 MAIN C.B.A. (A)

11.3.2 MAIN C.B.A. (B)

11.3.3 OPERATION I C.B.A.

11.3.4 OPERATION II C.B.A.

11.3.5 Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.

11.3.6 JUNCTION C.B.A.

11.3.7 ELECTRICAL PARTS LOCATED ON CHASSIS

11.3.8 SUMMARY OF "E" ITEM NUMBERS

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11.3.1 MAIN C.B.A. (A)

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INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC1001	PS2501-1-X	IC, LINEAR ERROR V. DET	⚠
	OR 0N3131-R.KT	IC, LINEAR ERROR V. DET	⚠
	OR 0N3131-S.KT	IC, LINEAR ERROR V. DET	⚠
IC3001	AN3479FBP	IC, LINEAR VIDEO/AUDIO PROCESS	
IC3101	MN3885S	IC, CCD 1H DELAY	E.S.D.
IC4201	AN3662FBP	IC, LINEAR Hi-Fi AUDIO MTS/SAP PROCESS	
IC6001	MN101D02GPH	IC, 8BIT MICROCONTROLLER	E.S.D.
IC6002	CNA1801N	REEL SENSOR UNIT	
	OR SG-254	REEL SENSOR UNIT	
	OR SG-254A	REEL SENSOR UNIT	
IC6003	CNA1801N	REEL SENSOR UNIT	
	OR SG-254	REEL SENSOR UNIT	
	OR SG-254A	REEL SENSOR UNIT	
IC6301	T47C216FF917	IC, 4BIT MICROCONTROLLER INDICATOR PANEL	E.S.D.

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q1001	2SC4533LP.KT		⚠
	OR 2SC5130LF608		⚠
Q1002	2SD2259		
Q1003	2SC4081T106R	CHIP	
	OR 2SD1819A(R,S)	CHIP	
Q1004	2SA1037K146R	CHIP	
	OR 2SB709A(R,S)	CHIP	
Q1005	2SA1576A106R	CHIP	
	OR 2SB1218ARS	CHIP	
Q1051	2SC3852		
	OR 2SD2375(P,Q)		
	OR 2SD2396(K)		
Q1052	2SC2412K1	CHIP	
	OR 2SD601(R,S)	CHIP	

Q1053	2SD2097TV2R	CHIP	
	OR 2SD235800A	CHIP	
Q3001	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q4001	2SA1576A106R	CHIP	
	OR 2SB1218ARS	CHIP	
Q4002	2SD1819A(R,S)	CHIP	
	OR 2SD601(R,S)	CHIP	
Q4003	2SD1819A(R,S)	CHIP	
	OR 2SD601(R,S)	CHIP	
Q4004	DTA114TU	CHIP	
	OR UN5115	CHIP	
Q4005	DTC114TU	CHIP	
	OR UN5215	CHIP	
Q4006	DTC114TU	CHIP	
	OR UN5215	CHIP	
Q4007	DTC114TU	CHIP	
	OR UN5215	CHIP	
Q4101	2SC2412K1	CHIP	
	OR 2SD601(R,S)	CHIP	
Q6001	2SC4081T106R	CHIP	
	OR 2SD1819A(R,S)	CHIP	
Q6002	2SB709A(R,S)	CHIP	
Q6003	2SC4081T106R	CHIP	
	OR 2SD1819A(R,S)	CHIP	
Q6005	2SA1037K146R	CHIP	
	OR 2SB709A(R,S)	CHIP	
Q6006	2SC4081T106R	CHIP	
	OR 2SD1819A(R,S)	CHIP	
Q6007	DTA143EK	CHIP	
	OR DTA143EU	CHIP	
	OR UN211L	CHIP	
	OR UN511L	CHIP	
Q6009	VEKS5522	PHOTO SENSOR UNIT	
Q6010	VEKS5522	PHOTO SENSOR UNIT	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks

D1001	S1WBA40		⚠
	OR S1WBA60		⚠
D1002	ERA18-04V3		
D1003	ERA18-04V3		
D1005	ERA18-04V3		
D1006	ERC30-01L3		
	OR RU3YXLFC1		
D1007	ERA18-04V3		
D1008	ERB81-004V1		
	OR RK14V1		
D1009	AK03V0		
	OR 1GWJ43TPA3		
D1011	MA4051N-TAKT	ZENER 5.1V	
D1012	MA858		
	OR 1SS135T-77		
D1013	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D1015	MA7180	ZENER 18V	⚠
	OR MA7180A-TR	ZENER 18V	⚠
	OR MA7180B-TR	ZENER 18V	⚠
D1016	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D1051	MA4100N	ZENER 10V	
	OR RD10JSAB3	ZENER 10V	
D1052	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D1053	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D1056	ERA15-01V3		
	OR ERA15-01V5		

D3004	MA4091-M	ZENER 9.1V	
	OR MA4091-MKT	ZENER 9.1V	
	OR MA4091-MMKT	ZENER 9.1V	
	OR RD9.1ESAB1	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
	OR 04AZ9.1ZTPA7	ZENER 9.1V	
D4205	MA4091	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
D4206	MA4091	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
D4207	MA4091	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
D4208	MA4091	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
D6001	VEKS5521	SENSOR LED UNIT	
D6003	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D6324	MA4056-M	ZENER 5.6V	
D6325	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D6326	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R1001	VRESC2TK275T	+-10% 1/2W 2.7M	⚠
R1003	VRESE2TJ334	1/2W 330K	
R1004	ERG2SJW333E	METAL OXIDE 2W 33K	
R1005	ERG1SJW560E	METAL OXIDE 1W 56	
R1006	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1007	ERDS2TJ101	100	
R1008	ERDS2TJ392	3.9K	

R1010	ERD25FYJ100T	10	⚠
	OR VRESS4FJ100E	10	⚠
R1011	ERD25FYJ4R7T	4.7	⚠
	OR VRESS4FJ4R7E	4.7	⚠
R1014	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1015	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1016	ERJ8GEYJ562V	MGF CHIP 1/8W 5.6K	
R1017	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R1018	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R1019	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R1020	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R1022	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1024	ERD2FCVG330T	+-2% 33	⚠
R1025	VRESE2TJ150	1/2W 15	
R1051	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R1052	ERDS2TJ153	15K	
R1053	ERDS2TJ153	15K	
R1057	ERDS2TJ331	330	
R1058	ERDS2TJ104	100K	
R1068	ERDS2T0	0	•
R3002	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3003	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3004	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3005	ERDS2TJ101	100	
R3021	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R3022	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R3023	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3027	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R3029	ERJ6GEYJ125V	MGF CHIP 1/10W 1.2M	
R3030	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3031	ERJ6GEYJ474V	MGF CHIP 1/10W 470K	
R3033	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R3034	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3035	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3036	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R3041	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3301	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3302	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	

R3305	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R4001	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4002	ERJ6GEYJ334V	MGF CHIP 1/10W 330K	
R4003	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R4004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4005	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R4006	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R4007	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R4008	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R4010	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4011	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4012	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4014	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4016	ERJ6GEY0R00V	MGF CHIP 1/10W 0	•
R4017	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4027	ERJ6GEY0R00V	MGF CHIP 1/10W 0	•
R4028	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4101	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R4102	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4103	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4201	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4202	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4203	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4204	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4205	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4206	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4207	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4208	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4209	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4210	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4213	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4214	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4218	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4219	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4224	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4225	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4226	ERDS2TJ152	1.5K	
R4227	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	

R4453	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R4901	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6001	ERDS2TJ101	100	
R6003	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6005	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6006	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6007	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6010	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6011	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6012	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6013	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6016	ERJ6GEYJ243V	MGF CHIP 1/10W 24K	
R6017	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6018	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6019	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6020	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6021	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6022	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6024	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6025	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R6026	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6027	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6028	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6029	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6030	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6033	ERDS2TJ681	680	
R6035	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6036	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R6037	ERDS2TJ391	390	
R6038	ERDS2TJ560	56	
R6039	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6040	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6041	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6042	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6043	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6044	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6045	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6046	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	

R6047	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6048	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6049	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6050	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6051	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6052	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6053	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6054	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6055	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6056	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6057	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6058	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6059	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6060	ERJ6GEYJ475V	MGF CHIP 1/10W 4.7M	
R6061	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6062	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R6063	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6064	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6066	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6068	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6069	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6070	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6071	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6072	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6073	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6074	ERDS2TJ272	2.7K	
R6076	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6077	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6078	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6079	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6080	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6081	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6082	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6083	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6084	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6085	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6086	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6087	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6089	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	

R6090	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6091	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6098	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6099	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6103	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6109	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6110	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6115	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6116	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6201	EVNGBAA01B24	VARIABLE 20K	
R6202	ERJ6GEYJ274V	MGF CHIP 1/10W 270K	
R6203	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6204	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R6205	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6224	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6228	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R6230	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6231	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R6316	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6346	ERDS2TJ470	47	
R6350	ERDS2TJ470	47	
R6351	ERDS2TJ330	33	
R6353	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6364	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6365	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6366	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6367	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6368	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6369	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R7002	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R7004	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R7006	ERJ6GEYJ112V	MGF CHIP 1/10W 1.1K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C1001	ECKNTS103MF8	CERAMIC +-20% 125V 0.01	⚠
	OR VCKSTQG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSUQD103MY	CERAMIC +-20% 125V 0.01	⚠

C1002	ECKNNB332ME8	CERAMIC +-20% 125V 3300P	⚠
	OR ECKNTS332ME8	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSTQG332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSUQD332MX	CERAMIC +-20% 125V 3300P	⚠
C1003	ECKNNB332ME8	CERAMIC +-20% 125V 3300P	⚠
	OR ECKNTS332ME8	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSTQG332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSUQD332MX	CERAMIC +-20% 125V 3300P	⚠
C1004	ECEA2DU121YB	ELECTROLYTIC 200V 120	⚠
	OR VCESAN2D121B	ELECTROLYTIC 200V 120	⚠
	OR VCESR2D121XB	ELECTROLYTIC 200V 120	⚠
C1005	ECA2DHG4R7B	ELECTROLYTIC 200V 4.7	
C1006	ECKW2H221KB5	CERAMIC 500V 220P	
C1007	VCKSLZE224MB	CERAMIC +-20% 25V 0.22	
C1009	VCYSBRE183KX	CERAMIC 25V 0.018	
C1010	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C1011	ECA1HHG4R7B	ELECTROLYTIC 50V 4.7	
C1012	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1013	ECA1EM331B	ELECTROLYTIC 25V 330	
C1014	ECEA1HGE470	ELECTROLYTIC 50V 47	
C1016	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1017	ECA0JM102B	ELECTROLYTIC 6.3V 1000	
C1018	ECQB1H104P9	POLYESTER +100%-0% 50V 0.1	
C1019	ECEA0JEE101	ELECTROLYTIC 6.3V 100	
C1021	EEUGA1H1R0B	ELECTROLYTIC 50V 1	
C1023	ECKW1H103ZF5	CERAMIC +80%-20% 50V 0.01	
C1025	ECKNRS101MBY	CERAMIC +-20% 125V 100P	⚠
	OR ECKNTS101MB	CERAMIC +-20% 125V 100	⚠
	OR VCKSTNG101KW	CERAMIC 125V 100P	⚠
	OR VCKSUND101KW	CERAMIC 125V 100P	⚠
C1027	ECKNTS103MF8	CERAMIC +-20% 125V 0.01	⚠
	OR VCKSTQG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSUQD103MY	CERAMIC +-20% 125V 0.01	⚠
C1028	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1029	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C1030	VCYSBRE183KX	CERAMIC 25V 0.018	
C1032	ECEA0JKA221	ELECTROLYTIC 6.3V 220	

C1051	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C1052	ECEA1CKA100	ELECTROLYTIC 16V 10	
C1058	ECEA0JEE101	ELECTROLYTIC 6.3V 100	
C1059	ECEA1CKA470	ELECTROLYTIC 16V 47	
C3001	ECA0JM471	ELECTROLYTIC 6.3V 470	
C3002	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3011	ECUV1H103KBN	C CHIP 50V 0.01	
C3014	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3015	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3017	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3018	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3019	ECUV1H560JCN	C CHIP +-5% 50V 56P	
C3021	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C3022	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3023	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3024	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3025	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3026	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3027	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C3028	ECEA1CKA100	ELECTROLYTIC 16V 10	
C3029	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3030	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3031	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3032	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3033	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3034	ECEA1HKAR22	ELECTROLYTIC 50V 0.22	
C3035	ECUV1H560JCN	C CHIP +-5% 50V 56P	
C3036	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3037	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C3038	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3039	ECUV1H822KBN	C CHIP 50V 8200P	
C3043	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3044	ECUV1C474ZFN	C CHIP +80%-20% 16V 0.47	
C3045	ECUV1C474ZFN	C CHIP +80%-20% 16V 0.47	
C3047	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3048	ECUV1H560JCN	C CHIP +-5% 50V 56P	
C3049	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3050	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3051	ECEA0JKA101	ELECTROLYTIC 6.3V 100	

C3052	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3053	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C3054	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3055	ECUV1H392KBN	C CHIP 50V 3900P	
C3056	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3057	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3058	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3059	ECUV1H020CCN	C CHIP +-0.25P 50V 2P	
C3062	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3101	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3102	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3104	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3105	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3106	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3108	ECUV1H102KBN	C CHIP 50V 1000P	
C3109	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3302	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3303	ECUV1H121JCN	C CHIP +-5% 50V 120P	
C3306	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C3308	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3312	ECUV1H100CCN	C CHIP +-0.25P 50V 10P	
C4001	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C4002	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4003	ECUV1H272KBN	C CHIP 50V 2700P	
C4004	ECUV1H103KBN	C CHIP 50V 0.01	
C4005	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C4006	ECUV1H102KBN	C CHIP 50V 1000P	
C4007	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C4008	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C4009	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4010	ECUV1E273KBN	C CHIP 25V 0.027	
C4011	ECUV1H822KBN	C CHIP 50V 8200P	
C4012	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4013	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C4014	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4017	ECUV1H103KBN	C CHIP 50V 0.01	
C4020	ECUV1H102KBN	C CHIP 50V 1000P	
C4101	ECUV1H221JCN	C CHIP +-5% 50V 220P	
C4102	ECQB1562JF	POLYESTER +-5% 100V 5600P	

C4103	ECUV1H103KBN	C CHIP 50V 0.01	
C4104	ECUV1H103KBN	C CHIP 50V 0.01	
C4106	ECEA1CKA220	ELECTROLYTIC 16V 22	
C4201	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C4202	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C4203	ECEA0JKA330	ELECTROLYTIC 6.3V 33	
C4204	ECEA0JKA330	ELECTROLYTIC 6.3V 33	
C4205	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4206	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4207	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4208	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4209	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4210	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4211	ECUV1H153KBN	C CHIP 50V 0.015	
C4212	ECUV1H153KBN	C CHIP 50V 0.015	
C4213	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4214	ECEA1CKA101	ELECTROLYTIC 16V 100	
C4215	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4216	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4217	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C4218	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4219	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4227	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C4228	ECUV1H103KBN	C CHIP 50V 0.01	
C4230	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4231	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4455	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4456	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4457	ECUV1E104KBN	C CHIP 25V 0.1	
C4458	ECUV1E104KBN	C CHIP 25V 0.1	
C4460	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4461	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4901	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4902	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C4903	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3	
C4904	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3	
C4905	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4906	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4911	ECUV1E223KBN	C CHIP 25V 0.022	

C4912	ECUV1E104KBN	C CHIP 25V 0.1	
C4913	ECUV1H103KBN	C CHIP 50V 0.01	
C4915	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4916	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4917	ECUV1E104KBN	C CHIP 25V 0.1	
C4918	ECUV1E104KBN	C CHIP 25V 0.1	
C4919	ECUV1E104KBN	C CHIP 25V 0.1	
C4920	ECUV1E104KBN	C CHIP 25V 0.1	
C6003	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6005	ECUV1H120JCN	C CHIP +-5% 50V 12P	
C6006	ECUV1H100CCN	C CHIP +-0.25P 50V 10P	
C6016	ECEA0JU471	ELECTROLYTIC 6.3V 470	
C6019	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6026	ECUV1H102KBN	C CHIP 50V 1000P	
C6033	ECUV1H104ZFN	C CHIP +80%-20% 50V 0.1	
C6201	ECUV1H102KBN	C CHIP 50V 1000P	
C6203	ECUV1H103KBN	C CHIP 50V 0.01	
C6207	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6208	ECEA1HKA010	ELECTROLYTIC 50V 1	
C6213	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6214	ECUV1H102KBN	C CHIP 50V 1000P	
C6216	ECUV1H103KBN	C CHIP 50V 0.01	
C6217	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6218	ECEA1CKA100	ELECTROLYTIC 16V 10	
C6221	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C6222	ECUV1H272KBN	C CHIP 50V 2700P	
C6223	ECUV1H103KBN	C CHIP 50V 0.01	
C6224	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6228	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6230	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6305	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C6306	ECA0JM471	ELECTROLYTIC 6.3V 470	
C6307	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6308	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C7001	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C7010	ECUV1H102KBN	C CHIP 50V 1000P	
C7015	ECEA1CKA100	ELECTROLYTIC 16V 10	
C7025	ECEA1CKA101	ELECTROLYTIC 16V 100	
C7029	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	

FILTERS

Ref. No.	Part No.	Part Name & Description	Remarks
FL4901	EFCT4R5YS5AA	CERAMIC FILTER	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L1001	ELF15N005AB	LINE FILTER 0.5A 18M	⚠
	OR VLQS0166	LINE FILTER 0.5A 18M	⚠
	OR VLQS0167	LINE FILTER 0.5A 18M	⚠
L1002	VLQSAB7D220K	22	
L1003	VLQSAB7D100K	10	
L1006	VLPS0083		
L3014	VLQSH02R390K	39	
L3016	ELESN330KA	33	
L3018	ELESN470KA	47	
L3101	ELESN101KA	100	
L4001	ELELN153KA	15M	
L4101	ELESN471KA	470	
L4202	ELESN101KA	100	
L4451	ELESN101KA	100	
L6301	ELESN101KA	100	
L7001	VLQSAB7D220K	22	
L7003	VLQSH02R101K	100	
L7005	ERJ6GEY0R00V	MGF CHIP 1/10W 0	•

CRYSTAL OSCILLATOR

Ref. No.	Part No.	Part Name & Description	Remarks
X3010	VSXS0195		
X6001	VSXS0232-TB		
X6301	EF0EC8004T4		

PIN HEADERS

Ref. No.	Part No.	PartName & Description	Remarks
P1001	VJPS1154	CONNECTOR 2P	
P3001	VJPS0885	CONNECTOR 20P	
P4001	VJSS0888	FE CONNECTOR 2P	

P6002	VJPS0881	CONNECTOR 8P	
P6201	VJPS0883	CONNECTOR 14P	
P6320	VJPS0712	CONNECTOR 19P	
P6322	VJSS0869	CONNECTOR RECEPTACLE 7P	MKA

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW6001	VSHS0058	LEAF SWITCH-SAFETY TAB	
SW6002	VSSS0159	MODE SELECT SWITCH	
SW7001	VSSS0152	SELECT SWITCH	

FUSE&PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
F1001	VSFS0003A16	FUSE 125V 1.6A	⚠
	OR VSFS0032B16	FUSE 125V 1.6A	⚠
	OR XBA1C16NU100	FUSE 125V 1.6A	⚠
PR1001	ICP-N38-TP1	IC PROTECTOR 1.5A	⚠
	OR UNH000600A	IC PROTECTOR 1.5A	⚠
PR1002	ICP-N38-TP1	IC PROTECTOR 1.5A	⚠
	OR UNH000600A	IC PROTECTOR 1.5A	⚠

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T1001	ETS28AD2J3PP		⚠
	OR VTPS0041-2		⚠
T4101	EIQ7QF018Q		

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK3001	VJHS0727	AUDIO/VIDEO JACK SOCKET	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
E21	VEQS0611	TUNER,UHF/VHF NR	
E23	EYF52BC	FUSE HOLDER	
E25	VEKS5627	DISPLAY TUBE/INFRARED RECEIVER UNIT	

TOP PREVIOUS NEXT

11.3.2 MAIN C.B.A. (B)

TOP PREVIOUS NEXT

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC1001	PS2501-1-X	IC, LINEAR ERROR V. DET	⚠
	OR 0N3131-R.KT	IC, LINEAR ERROR V. DET	⚠
	OR 0N3131-S.KT	IC, LINEAR ERROR V. DET	⚠
IC3001	AN3479FBP	IC, LINEAR VIDEO/AUDIO PROCESS	
IC3101	MN3885S	IC, CCD 1H DELAY	E.S.D.
IC3801	AN3275SB	IC, LINEAR SYNC DETECTOR	
IC4201	AN3662FBP	IC, LINEAR Hi-Fi AUDIO MTS/SAP PROCESS	
IC6001	MN101D02HPK	IC, 8BIT MICROCONTROLLER	E.S.D.
IC6002	CNA1801N	REEL SENSOR UNIT	
	OR SG-254	REEL SENSOR UNIT	
	OR SG-254A	REEL SENSOR UNIT	
IC6003	CNA1801N	REEL SENSOR UNIT	
	OR SG-254	REEL SENSOR UNIT	
	OR SG-254A	REEL SENSOR UNIT	
IC6301	M38122-123FP	IC, 8BIT MICROCONTROLLER INDICATOR PANEL	E.S.D.

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q1001	2SC4533LP.KT		⚠
	OR 2SC5130LF608		⚠
Q1002	2SD2259		
Q1003	2SC4081T106R	CHIP	
	OR 2SD1819A(R,S)	CHIP	
Q1004	2SA1037K146R	CHIP	
	OR 2SB709A(R,S)	CHIP	
Q1005	2SA1576A106R	CHIP	
	OR 2SB1218ARS	CHIP	
Q1051	2SC3852		
	OR 2SD2375(P,Q)		
	OR 2SD2396(K)		
Q1052	2SC2412K1	CHIP	

	OR 2SD601(R,S)	CHIP	
Q1053	2SD2097TV2R	CHIP	
	OR 2SD235800A	CHIP	
Q3001	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q3875	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q4001	2SA1576A106R	CHIP	
	OR 2SB1218ARS	CHIP	
Q4002	2SD1819A(R,S)	CHIP	
	OR 2SD601(R,S)	CHIP	
Q4003	2SD1819A(R,S)	CHIP	
	OR 2SD601(R,S)	CHIP	
Q4004	DTA114TU	CHIP	
	OR UN5115	CHIP	
Q4005	DTC114TU	CHIP	
	OR UN5215	CHIP	
Q4006	DTC114TU	CHIP	
	OR UN5215	CHIP	
Q4007	DTC114TU	CHIP	
	OR UN5215	CHIP	
Q4101	2SC2412K1	CHIP	
	OR 2SD601(R,S)	CHIP	
Q6001	2SC4081T106R	CHIP	
	OR 2SD1819A(R,S)	CHIP	
Q6002	2SB709A(R,S)	CHIP	
Q6003	2SC4081T106R	CHIP	
	OR 2SD1819A(R,S)	CHIP	
Q6005	2SA1037K146R	CHIP	
	OR 2SB709A(R,S)	CHIP	
Q6006	2SC4081T106R	CHIP	
	OR2SD1819A(R,S)	CHIP	
Q6007	DTA143EK	CHIP	
	OR DTA143EU	CHIP	
	OR UN211L	CHIP	
	OR UN511L	CHIP	
Q6009	VEKS5522	PHOTO SENSOR UNIT	
Q6010	VEKS5522	PHOTO SENSOR UNIT	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D1001	S1WBA40		⚠
	OR S1WBA60		⚠
D1002	ERA18-04V3		
D1003	ERA18-04V3		
D1005	ERA18-04V3		
D1006	ERC30-01L3		
	OR RU3YXLFC1		
D1007	ERA18-04V3		
D1008	ERB81-004V1		
	OR RK14V1		
D1009	AK03V0		
	OR 1GWJ43TPA3		
D1011	MA4051N-TAKT	ZENER 5.1V	
D1012	MA858		
	OR 1SS135T-77		
D1013	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D1015	MA7180	ZENER 18V	⚠
	OR MA7180A-TR	ZENER 18V	⚠
	OR MA7180B-TR	ZENER 18V	⚠
D1016	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D1051	MA4100N	ZENER 10V	
	OR RD10JSAB3	ZENER 10V	
D1052	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D1053	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		

D1056	ERA15-01V3		
	OR ERA15-01V5		
D3004	MA4091-M	ZENER 9.1V	
	OR MA4091-MKT	ZENER 9.1V	
	OR MA4091-MMKT	ZENER 9.1V	
	OR RD9.1ESAB1	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
	OR 04AZ9.1ZTPA7	ZENER 9.1V	
D4205	MA4091	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
D4206	MA4091	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
D4207	MA4091	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
D4208	MA4091	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
D6001	VEKS5521	SENSOR LED UNIT	
D6003	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D6324	MA4056-M	ZENER 5.6V	
D6325	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D6326	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R1001	VRESC2TK275T	+-10% 1/2W 2.7M	⚠
R1003	VRESE2TJ334	1/2W 330K	
R1004	ERG2SJW333E	METAL OXIDE 2W 33K	
R1005	ERG1SJW560E	METAL OXIDE 1W 56	
R1006	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	

R1007	ERDS2TJ101	100	
R1008	ERDS2TJ392	3.9K	
R1010	ERD25FYJ100T	10	⚠
	OR VRESS4FJ100E	10	⚠
R1011	ERD25FYJ4R7T	4.7	⚠
	OR VRESS4FJ4R7E	4.7	⚠
R1014	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1015	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1016	ERJ8GEYJ562V	MGF CHIP 1/8W 5.6K	
R1017	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R1018	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R1019	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R1020	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R1022	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1024	ERD2FCVG330T	+-2% 33	⚠
R1025	VRESE2TJ150	1/2W 15	
R1051	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R1052	ERDS2TJ153	15K	
R1053	ERDS2TJ153	15K	
R1057	ERDS2TJ331	330	
R1058	ERDS2TJ104	100K	
R1068	ERDS2T0	0	•
R3002	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3003	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3004	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3005	ERDS2TJ101	100	
R3021	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R3022	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R3023	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3027	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R3029	ERJ6GEYJ125V	MGF CHIP 1/10W 1.2M	
R3030	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3031	ERJ6GEYJ474V	MGF CHIP 1/10W 470K	
R3033	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R3034	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3035	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3036	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R3041	ERJ6GEYJ750V	MGF CHIP 1/10W 75	

R3301	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3302	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R3305	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R3803	ERJ6GEYG473V	MGF CHIP +-2% 1/10W 47K	
R3807	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R3810	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3811	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3874	ERDS2TJ471	470	
R3875	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4001	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4002	ERJ6GEYJ334V	MGF CHIP 1/10W 330K	
R4003	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R4004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4005	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R4006	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R4007	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R4008	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R4010	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4011	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4012	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4014	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4016	ERJ6GEY0R00V	MGF CHIP 1/10W 0	•
R4017	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4027	ERJ6GEY0R00V	MGF CHIP 1/10W 0	•
R4028	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4101	ERJ6GEYJ224V	MGF CHIP 1/10W220K	
R4102	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4103	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4201	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4202	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4203	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4204	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4205	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4206	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4207	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4208	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4209	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4210	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	

R4213	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4214	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4218	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4219	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4224	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4225	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4226	ERDS2TJ152	1.5K	
R4227	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R4453	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R4901	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6001	ERDS2TJ101	100	
R6003	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6005	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6006	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6007	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6010	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6011	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6012	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6013	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6014	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6015	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6016	ERJ6GEYJ243V	MGF CHIP 1/10W 24K	
R6017	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6018	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6019	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6020	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6021	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6022	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6024	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6025	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R6026	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6027	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6028	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6029	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6030	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6033	ERDS2TJ681	680	
R6035	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6036	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	

R6037	ERDS2TJ391	390	
R6038	ERDS2TJ560	56	
R6039	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6040	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6041	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6042	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6043	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6044	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6045	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6046	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6047	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6048	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6049	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6050	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6051	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6052	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6053	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6054	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6055	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6056	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6057	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6058	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6059	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6060	ERJ6GEYJ475V	MGF CHIP 1/10W 4.7M	
R6061	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6062	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R6063	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6064	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6066	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6068	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6069	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6070	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6071	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6072	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6073	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6074	ERDS2TJ272	2.7K	
R6076	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6077	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6078	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	

R6079	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6080	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6081	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6082	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6083	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6084	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6085	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6086	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6087	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6088	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6089	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6091	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6098	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6099	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6103	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6109	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6110	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6115	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6116	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6201	EVNGBAA01B24	VARIABLE 20K	
R6202	ERJ6GEYJ274V	MGF CHIP 1/10W 270K	
R6203	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6204	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R6205	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6224	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6228	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R6230	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6231	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R6301	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R6302	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R6303	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R6304	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R6305	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R6306	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R6307	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R6308	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R6309	ERDS2TJ270	27	
R6310	ERDS2TJ270	27	
R6322	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	

R6346	ERDS2TJ470	47	
R6353	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6364	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6365	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6366	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6367	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6368	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6369	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6372	ERJ6GEY0R00V	MGF CHIP 1/10W 0	•
R7002	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R7004	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R7006	ERJ6GEYJ112V	MGF CHIP 1/10W 1.1K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C1001	ECKNTS103MF8	CERAMIC +-20% 125V 0.01	⚠
	OR VCKSTQG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSUQD103MY	CERAMIC +-20% 125V 0.01	⚠
C1002	ECKNNB332ME8	CERAMIC +-20% 125V 3300P	⚠
	OR ECKNTS332ME8	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSTQG332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSUQD332MX	CERAMIC +-20% 125V 3300P	⚠
C1003	ECKNNB332ME8	CERAMIC +-20% 125V3300P	⚠
	OR ECKNTS332ME8	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSTQG332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSUQD332MX	CERAMIC +-20% 125V 3300P	⚠
C1004	ECEA2DU121YB	ELECTROLYTIC 200V 120	⚠
	OR VCESAN2D121B	ELECTROLYTIC 200V 120	⚠
	OR VCESR2D121XB	ELECTROLYTIC 200V 120	⚠
C1005	ECA2DHG4R7B	ELECTROLYTIC 200V 4.7	
C1006	ECKW2H221KB5	CERAMIC 500V 220P	
C1007	VCKSLZE224MB	CERAMIC +-20% 25V 0.22	
C1009	VCYSBRE183KX	CERAMIC 25V 0.018	
C1010	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C1011	ECA1HHG4R7B	ELECTROLYTIC 50V 4.7	
C1012	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1013	ECA1EM331B	ELECTROLYTIC 25V 330	

C1014	ECEA1HGE470	ELECTROLYTIC 50V 47	
C1016	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1017	ECA0JM102B	ELECTROLYTIC 6.3V 1000	
C1018	ECQB1H104P9	POLYESTER +100%-0% 50V 0.1	
C1019	ECEA0JEE101	ELECTROLYTIC 6.3V 100	
C1021	EEUGA1H1R0B	ELECTROLYTIC 50V 1	
C1023	ECKW1H103ZF5	CERAMIC +80%-20% 50V 0.01	
C1025	ECKNRS101MBY	CERAMIC +-20% 125V 100P	⚠
	OR ECKNTS101MB	CERAMIC +-20% 125V 100	⚠
	OR VCKSTNG101KW	CERAMIC 125V 100P	⚠
	OR VCKSUND101KW	CERAMIC 125V 100P	⚠
C1027	ECKNTS103MF8	CERAMIC +-20% 125V 0.01	⚠
	OR VCKSTQG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSUQD103MY	CERAMIC +-20% 125V 0.01	⚠
C1028	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1029	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C1030	VCYSBRE183KX	CERAMIC 25V 0.018	
C1032	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C1051	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C1052	ECEA1CKA100	ELECTROLYTIC 16V 10	
C1058	ECEA0JEE101	ELECTROLYTIC 6.3V 100	
C1059	ECEA1CKA470	ELECTROLYTIC 16V 47	
C3001	ECA0JM471	ELECTROLYTIC 6.3V 470	
C3002	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3011	ECUV1H103KBN	C CHIP 50V 0.01	
C3014	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3015	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3017	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3018	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3019	ECUV1H560JCN	C CHIP +-5% 50V 56P	
C3021	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C3022	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3023	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3024	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3025	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3026	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3027	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C3028	ECEA1CKA100	ELECTROLYTIC 16V 10	

C3029	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3030	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3031	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3032	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3033	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3034	ECEA1HKAR22	ELECTROLYTIC 50V 0.22	
C3035	ECUV1H560JCN	C CHIP +-5% 50V 56P	
C3036	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3037	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C3038	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3039	ECUV1H822KBN	C CHIP 50V 8200P	
C3043	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3044	ECUV1C474ZFN	C CHIP +80%-20% 16V 0.47	
C3045	ECUV1C474ZFN	C CHIP +80%-20% 16V 0.47	
C3047	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3048	ECUV1H560JCN	C CHIP +-5% 50V 56P	
C3049	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3050	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3051	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3052	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3053	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C3054	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3055	ECUV1H392KBN	C CHIP 50V 3900P	
C3056	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3057	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3058	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3059	ECUV1H020CCN	C CHIP +-0.25P 50V 2P	
C3062	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3101	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3102	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3104	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3105	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3106	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3108	ECUV1H102KBN	C CHIP 50V 1000P	
C3109	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3302	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3303	ECUV1H121JCN	C CHIP +-5% 50V 120P	
C3306	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C3308	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	

C3312	ECUV1H100CCN	C CHIP +-0.25P 50V 10P	
C3801	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3802	ECUV1H103ZFN	CCHIP +80%-20% 50V 0.01	
C3803	ECUV1H332KBN	C CHIP 50V 3300P	
C3804	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3805	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3806	ECUV1H392KBN	C CHIP 50V 3900P	
C3807	ECUV1H103KBN	C CHIP 50V 0.01	
C3808	ECUV1E104KBN	C CHIP 25V 0.1	
C3811	ECUV1H103KBN	C CHIP 50V 0.01	
C3812	ECUV1H102KBN	C CHIP 50V 1000P	
C3815	ECUV1E104KBN	C CHIP 25V 0.1	
C3816	VCUSTBC224KB	CERAMIC +80%-20% 16V 0.22	
C3817	ECUV1H103KBN	C CHIP 50V 0.01	
C3818	ECUV1H103KBN	C CHIP 50V 0.01	
C3819	ECUV1H103KBN	C CHIP 50V 0.01	
C3820	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3821	ECUV1H390JCN	C CHIP +-5% 50V 39P	
C3822	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3825	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3826	ECUV1C474ZFN	C CHIP +80%-20% 16V 0.47	
C3828	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C4001	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C4002	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4003	ECUV1H272KBN	C CHIP 50V 2700P	
C4004	ECUV1H103KBN	C CHIP 50V 0.01	
C4005	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C4006	ECUV1H102KBN	C CHIP 50V 1000P	
C4007	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C4008	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C4009	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4010	ECUV1E273KBN	C CHIP 25V 0.027	
C4011	ECUV1H822KBN	C CHIP 50V 8200P	
C4012	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4013	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C4014	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4017	ECUV1H103KBN	C CHIP 50V 0.01	
C4020	ECUV1H102KBN	C CHIP 50V 1000P	
C4101	ECUV1H221JCN	C CHIP +-5% 50V 220P	

C4102	ECQB1562JF	POLYESTER +-5% 100V 5600P	
C4103	ECUV1H103KBN	C CHIP 50V 0.01	
C4104	ECUV1H103KBN	C CHIP 50V 0.01	
C4106	ECEA1CKA220	ELECTROLYTIC 16V 22	
C4201	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C4202	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C4203	ECEA0JKA330	ELECTROLYTIC 6.3V 33	
C4204	ECEA0JKA330	ELECTROLYTIC 6.3V 33	
C4205	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4206	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4207	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4208	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4209	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4210	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4211	ECUV1H153KBN	C CHIP 50V 0.015	
C4212	ECUV1H153KBN	C CHIP 50V 0.015	
C4213	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4214	ECEA1CKA101	ELECTROLYTIC 16V 100	
C4215	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4216	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4217	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C4218	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4219	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4227	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C4228	ECUV1H103KBN	C CHIP 50V 0.01	
C4230	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4231	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4455	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4456	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4457	ECUV1E104KBN	C CHIP 25V 0.1	
C4458	ECUV1E104KBN	C CHIP 25V 0.1	
C4460	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4461	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4901	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4902	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C4903	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3	
C4904	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3	
C4905	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4906	ECEA1HKA010	ELECTROLYTIC 50V 1	

C4911	ECUV1E223KBN	C CHIP 25V 0.022	
C4912	ECUV1E104KBN	C CHIP 25V 0.1	
C4913	ECUV1H103KBN	C CHIP 50V 0.01	
C4915	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4916	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4917	ECUV1E104KBN	C CHIP 25V 0.1	
C4918	ECUV1E104KBN	C CHIP 25V 0.1	
C4919	ECUV1E104KBN	C CHIP 25V 0.1	
C4920	ECUV1E104KBN	C CHIP 25V 0.1	
C6003	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6005	ECUV1H120JCN	C CHIP +-5% 50V 12P	
C6006	ECUV1H100CCN	C CHIP +-0.25P 50V 10P	
C6016	ECEA0JU471	ELECTROLYTIC 6.3V 470	
C6019	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6026	ECUV1H102KBN	C CHIP 50V 1000P	
C6033	ECUV1H104ZFN	C CHIP +80%-20% 50V 0.1	
C6201	ECUV1H102KBN	C CHIP 50V 1000P	
C6203	ECUV1H103KBN	C CHIP 50V 0.01	
C6207	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6208	ECEA1HKA010	ELECTROLYTIC 50V 1	
C6213	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6214	ECUV1H102KBN	C CHIP 50V 1000P	
C6216	ECUV1H103KBN	C CHIP 50V 0.01	
C6217	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6218	ECEA1CKA100	ELECTROLYTIC 16V 10	
C6221	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C6222	ECUV1H272KBN	C CHIP 50V 2700P	
C6223	ECUV1H103KBN	C CHIP 50V 0.01	
C6224	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6228	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6230	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6302	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6304	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C6305	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C6306	ECA0JM471	ELECTROLYTIC 6.3V 470	
C7001	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C7010	ECUV1H102KBN	C CHIP 50V 1000P	
C7015	ECEA1CKA100	ELECTROLYTIC 16V 10	
C7025	ECEA1CKA101	ELECTROLYTIC 16V 100	

C7029	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	

FILTERS

Ref. No.	Part No.	Part Name & Description	Remarks
FL4901	EFCT4R5YS5AA	CERAMIC FILTER	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L1001	ELF15N005AB	LINE FILTER 0.5A 18M	⚠
	OR VLQS0166	LINE FILTER 0.5A 18M	⚠
	OR VLQS0167	LINE FILTER 0.5A 18M	⚠
L1002	VLQSAB7D220K	22	
L1003	VLQSAB7D100K	10	
L1006	VLPS0083		
L3014	VLQSH02R390K	39	
L3016	ELESN330KA	33	
L3018	ELESN470KA	47	
L3101	ELESN101KA	100	
L3801	ELESN101KA	100	
L3802	ELESN470KA	47	
L4001	ELELN153KA	15M	
L4101	ELESN471KA	470	
L4202	ELESN101KA	100	
L4451	ELESN101KA	100	
L6301	ELESN101KA	100	
L7001	VLQSAB7D220K	22	
L7003	VLQSH02R101K	100	
L7005	ERJ6GEY0R00V	MGF CHIP 1/10W 0	•

CRYSTAL OSCILLATOR

Ref. No.	Part No.	Part Name & Description	Remarks
X3010	VSXS0195		
X6001	VSXS0232-TB		
X6301	EF0EC4004T4		

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks

P1001	VJPS1154	CONNECTOR 2P	
P3001	VJPS0885	CONNECTOR 20P	
P4001	VJSS0888	FE CONNECTOR 2P	
P6002	VJPS0881	CONNECTOR 8P	
P6201	VJPS0883	CONNECTOR 14P	
P6320	VJPS0712	CONNECTOR 19P	
P6322	VJSS0869	CONNECTOR RECEPTACLE 7P	MKA

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW6001	VSHS0058	LEAF SWITCH-SAFETY TAB	
SW6002	VSSS0159	MODE SELECT SWITCH	
SW7001	VSSS0152	SELECT SWITCH	

FUSE&PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
F1001	VSFS0003A16	FUSE 125V 1.6A	⚠
	OR VSFS0032B16	FUSE 125V 1.6A	⚠
	OR XBA1C16NU100	FUSE 125V 1.6A	⚠
PR1001	ICP-N38-TP1	IC PROTECTOR 1.5A	⚠
	OR UNH000600A	IC PROTECTOR 1.5A	⚠
PR1002	ICP-N38-TP1	IC PROTECTOR 1.5A	⚠
	OR UNH000600A	IC PROTECTOR 1.5A	⚠

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T1001	ETS28AD2J3PP		⚠
	OR VTPS0041-2		⚠
T4101	EIQ7QF018Q		

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK3001	VJHS0727	AUDIO/VIDEO JACK SOCKET	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
E21	VEQS0611	TUNER,UHF/VHF NR	

E23	EYF52BC	FUSE HOLDER	
E25	VEKS5628	DISPLAY TUBE/INFRARED RECEIVER UNIT	

TOP PREVIOUS NEXT

11.3.3 OPERATION I C.B.A.

TOP PREVIOUS NEXT

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D7801	MA4051-M	ZENER 5.1V	
	OR 04AZ5.1ZTPA7	ZENER 5.1V	
D7802	MA4051-M	ZENER 5.1V	
	OR 04AZ5.1ZTPA7	ZENER 5.1V	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R7801	ERDS2TJ750	75	
R7802	ERDS2T0	0	•
R7803	ERDS2T0	0	•

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P6302	VJSS0761	CONNECTOR 19P	

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW6301	EVQ21405R	PUSH SWITCH	
SW6303	EVQ21405R	PUSH SWITCH	
SW6305	EVQ21405R	PUSH SWITCH	
SW6306	EVQ21405R	PUSH SWITCH	

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK7801	VJHS0734	FRONT AUDIO/VIDEO JACK SOCKET	
	(A)		
	VJHS0736	FRONT AUDIO/VIDEO JACK SOCKET	
	(B)		

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks

E31	VJRS0091	CONNECTION PIECE	

TOP PREVIOUS NEXT

11.3.4 OPERATION II C.B.A.

TOP PREVIOUS NEXT

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P6350	VJPS0765	CONNECTOR PLUG 7P	MKA

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW6309	EVQ21405R	PUSH SWITCH	
SW6311	EVQ21405R	PUSH SWITCH	
SW6313	EVQ21405R	PUSH SWITCH	
SW6314	EVQ21405R	PUSH SWITCH	
SW6316	EVQ21405R	PUSH SWITCH	

TOP PREVIOUS NEXT

11.3.5 Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.

TOP PREVIOUS NEXT

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC2601	AN3809K	IC, LINEAR CYL. DRIVE	
IC3501	AN3361SB	IC, LINEAR HEAD AMP	
IC4401	AN3328S	IC, LINEAR Hi-Fi AUDIO HEAD AMP	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R2601	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2602	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2603	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2604	ERDS2TJ1R0	1	
R2605	ERDS2TJ1R2	1.2	
R2606	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3501	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3502	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3503	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3504	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3505	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3506	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3507	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4405	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4406	ERJ6GEYJ180V	MGF CHIP 1/10W 18	
R4407	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4410	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4411	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C2604	ECUV1E104KBN	C CHIP 25V 0.1	
C2605	ECUV1E104KBN	C CHIP 25V 0.1	

C2606	ECUV1E104KBN	C CHIP 25V 0.1	
C2607	ECUV1E104KBN	C CHIP 25V 0.1	
C2608	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2609	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2610	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C2611	ECUV1E333KBN	C CHIP 25V 0.033	
C2612	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2613	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2614	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2615	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3504	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3505	ECEA1CKA470	ELECTROLYTIC 16V 47	
C3506	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3507	ECUV1H102KBN	C CHIP 50V 1000P	
C3508	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3511	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3512	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3513	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3519	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3520	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3523	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3524	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3528	ECUV1E104ZFN	CCHIP +80%-20% 25V 0.1	
C3529	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3532	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3533	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4401	ECUV1H102KBN	C CHIP 50V 1000P	
C4402	ECUV1H102KBN	C CHIP 50V 1000P	
C4405	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4406	ECUV1H472KBN	C CHIP 50V 4700P	
C4408	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4409	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4411	ERJ6GEY0R00V	MGF CHIP 1/10W 0	•
C4412	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4413	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4414	ECEA0JKA470	ELECTROLYTIC 6.3V 47	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L3501	ELESN101KA	100	
L4401	ELESN101KA	100	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P3501	VJSS0886	CONNECTOR 20P	

TOP PREVIOUS NEXT

11.3.6 JUNCTION C.B.A.

TOP PREVIOUS NEXT

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R2531	ERDS2TJ270	27	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C2531	ECEA1CKA220	ELECTROLYTIC 16V 22	
C2532	ECEA1CKA220	ELECTROLYTIC 16V 22	
C2533	ECEA1CKA220	ELECTROLYTIC 16V 22	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P2531	VJSS0884	CONNECTOR 14P	

TOP PREVIOUS NEXT

11.3.7 ELECTRICAL PARTS LOCATED ON CHASSIS

TOP PREVIOUS NEXT

Ref. No.	Part No.	Part Name & Description	Remarks
IC2501	AN3845SC	IC, LINEAR CAP./LOADING DRIVE	
E22	VJAS0203	AC CORD W/PLUG	⚠
	OR VJAS0205	AC CORD W/PLUG	⚠

TOP PREVIOUS NEXT

11.3.8 SUMMARY OF "E" ITEM NUMBERS

TOP PREVIOUS

REFER TO ELECTRICAL PARTS LIST, FOR MODEL INFORMATION

Ref. No.	Part No.	Part Name & Description	Remarks
E1	VEPS6052HA	MAIN C.B.A.	RTL
E1	VEPS6055HA	MAIN C.B.A.	RTL
E4	VEPS8052A	OPERATION I C.B.A.	RTL
E4	VEPS8052B	OPERATION I C.B.A.	RTL
E5	VEPS8053A	OPERATION II C.B.A.	RTL
E6	VEPS5019A	Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.	RTL
E7	VEPS0A25A	JUNCTION C.B.A.	RTL
E21	VEQS0611	TUNER,UHF/VHF NR	
E22	VJAS0203	AC CORD W/PLUG	⚠
E22	VJAS0205	AC CORD W/PLUG	⚠
E23	EYF52BC	FUSE HOLDER	
E25	VEKS5627	DISPLAY TUBE/INFRARED RECEIVER UNIT	
E25	VEKS5628	DISPLAY TUBE/INFRARED RECEIVER UNIT	
E31	VJRS0091	CONNECTION PIECE	

TOP PREVIOUS

5 DISASSEMBLY/ASSEMBLY PROCEDURES

5.1. CABINET SECTION

5.1.1. Disassembly Flowchart

Perform all disassembly procedures in the order described in the "Disassembly Flowchart" shown below. When reassembling, use the reverse procedure.

CAUTION:

Disconnect AC plug before disassembly.

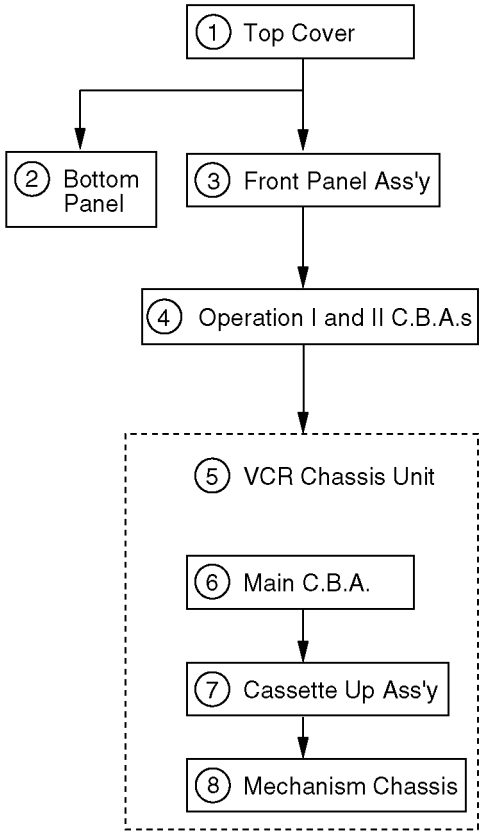


Fig. D1

5.1.2. Top Cover

5.1.2.1. Disassembly Procedure

1. Remove 2 Screws (A) and 3 Screws (B).
2. Lift up on the rear portion of the Top Cover and remove.

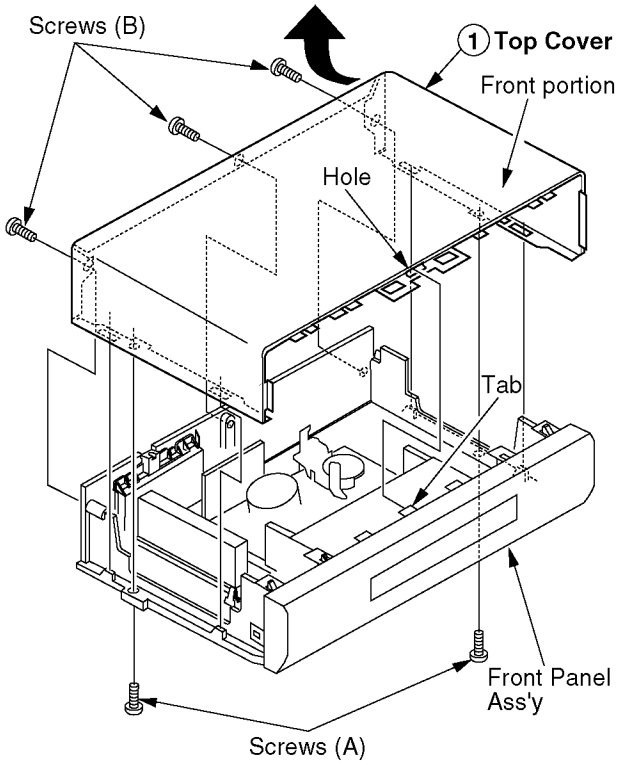


Fig. D2

5.1.2.2. Reassembly Notes

Install the Top Cover front portion at a downward angle so that the tab on the Front Panel Ass'y fits into the hole in the Top Cover.

Then, lower the rear portion into place and tighten 2 Screws (A) and 3 Screws (B).

5.1.3. Bottom Panel

5.1.3.1. Disassembly Procedure

1. Remove 2 Screws with Washers (A), (B), and Screw (C).
2. While pushing 2 Locking Tabs (A) to release, slide the Bottom Panel and remove.

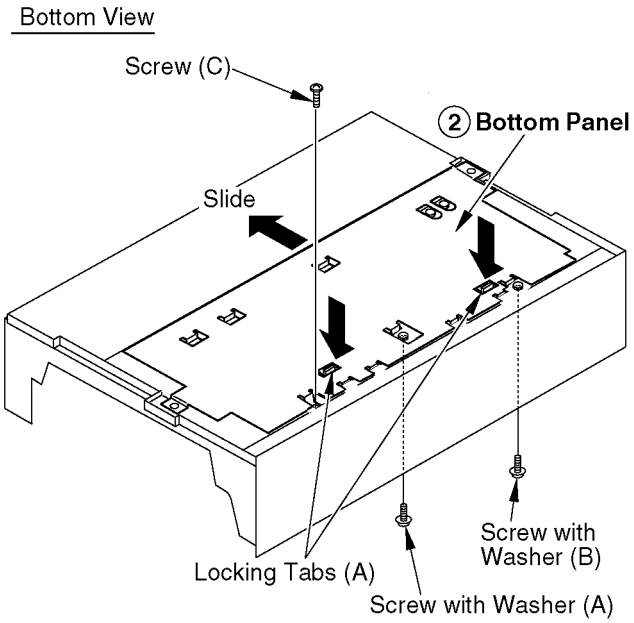


Fig. D3

5.1.4. Front Panel Ass'y

5.1.4.1. Disassembly Procedure

1. Release Locking Tab (B) on the left side.
2. Release 2 Locking Tabs (C) on the top left.
3. Release 2 Locking Tabs (D) on the top right.
4. Release Locking Tab (E) on the right side.
5. Release 3 Locking Tabs (F) on the bottom side. Then, remove the Front Panel Ass'y.

Note:

Work carefully so as not to break the Tabs.

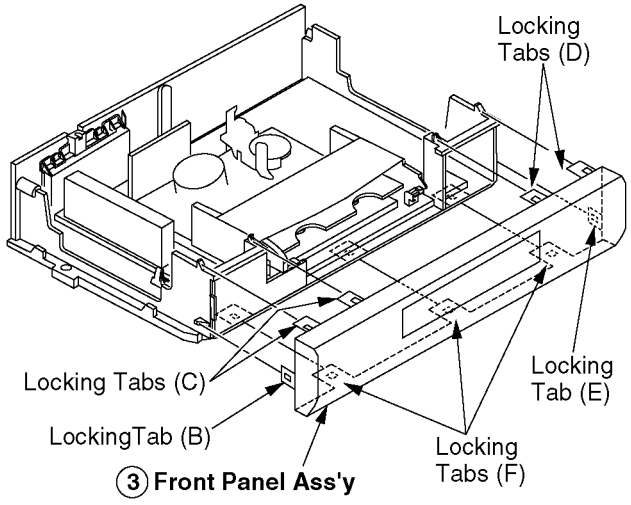


Fig. D4-1

5.1.4.2. Reassembly Notes

CAUTION:

Opener Lever may be damaged when Front Panel Ass'y is installed, with Cassette Door-Lid of Front Panel Ass'y and Opener Lever of Cassette Up Ass'y set incorrectly.

Installation of Front Panel Ass'y

CAUTION

1) When installing the Front Panel Ass'y, swing the Cassette Door-Lid all the way open until the Cassette Door tab clears the Opener Lever.
2) Make sure that all locking tabs are aligned properly. Then, pess the Front Panel straight in.

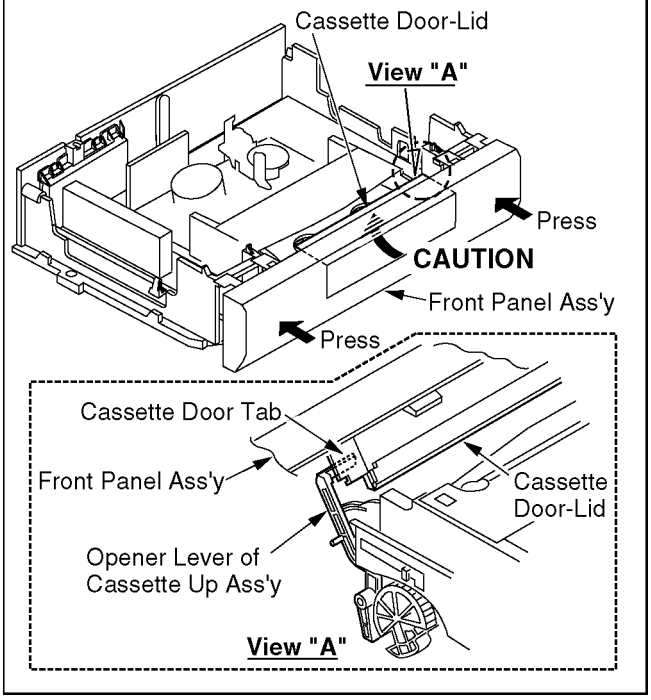


Fig. D4-2

5.1.5. Operation C.B.A.

5.1.5.1. Disassembly Procedure

1. Releasing 4 Locking Tabs (G).
2. Disconnect 2 Connectors P6302, and P6350 on the Operation I and II C.B.A.s.

Note:

Work carefully so as not to break the Tabs.

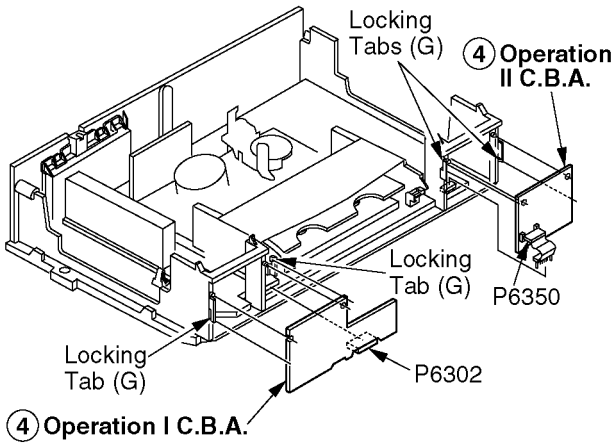


Fig. D5

5.1.6. VCR Chassis Unit

5.1.6.1. Disassembly Procedure

1. Slide the Holder Unit (refer to "METHOD FOR LOADING/UNLOADING OF MECHANISM" in Service Notes) to gain access to 2 Screws (D) for removal.
2. Remove Screws (E), (F), (G), (H), (I), and Screw with Washer (C).
3. Remove Chassis Angle.

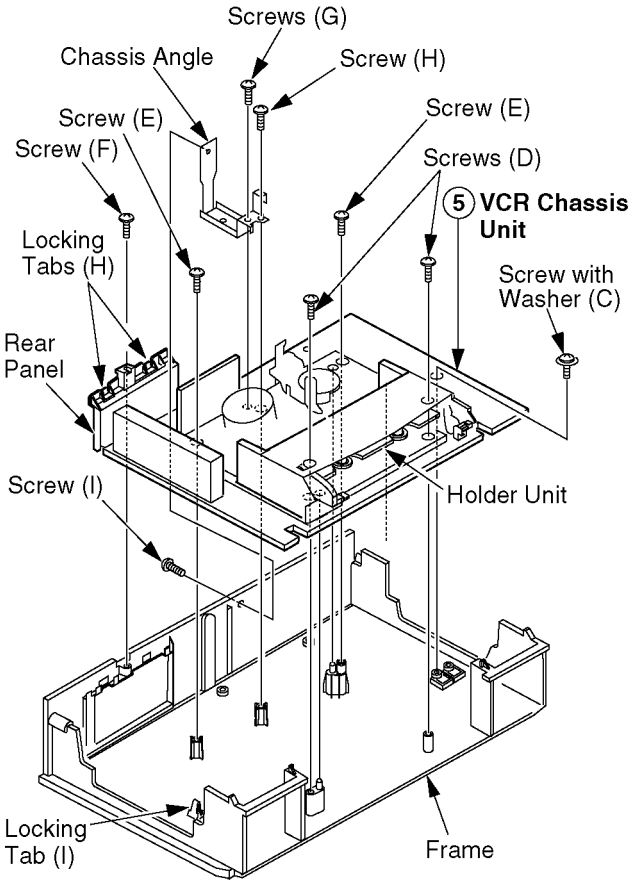


Fig. D6-1

4. Push 2 Locking Tabs (H) inward to release while lifting the Rear Panel.
5. Push Locking Tab (I) outward while gently lifting the left side of the Main C.B.A. (Portion "A").
6. Lift the right side of the Cassette Up Ass'y (Portion "B") and remove VCR Chassis Unit out of the Frame.

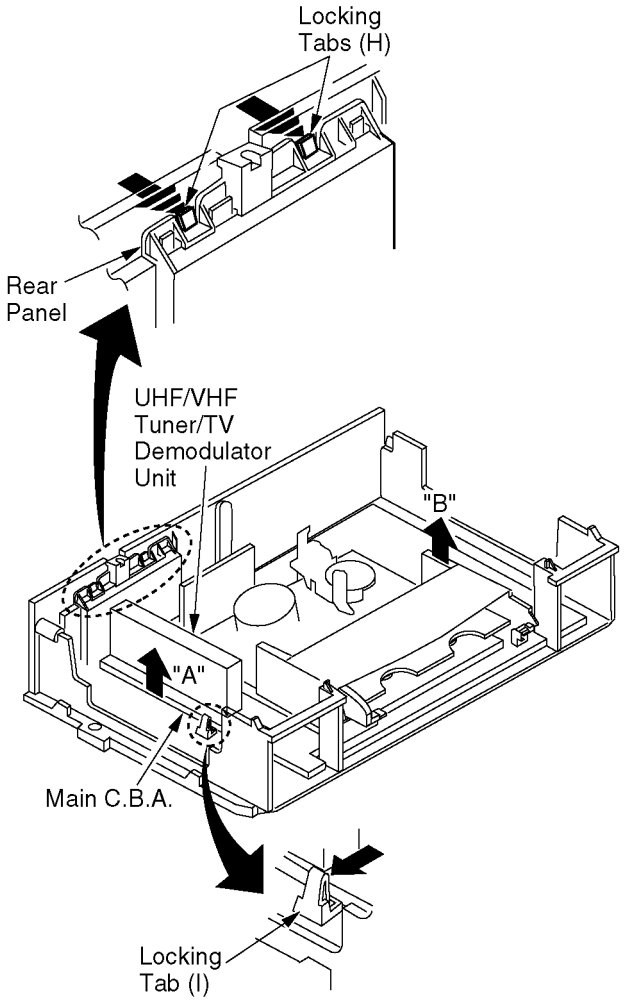


Fig. D6-2

Note:

1. DO NOT pull upward on the UHF/VHF Tuner/TV Demodulator Unit because you may crack the Main C.B.A.
2. Work carefully so as not to break tabs.

5.1.6.2. Reassembly Notes

1. When installing 2 Screws (D), slide the Holder Unit (refer to "METHOD FOR LOADING/UNLOADING OF MECHANISM" in Service Notes) to tighten screws. Then slide it back to the **EJECT** Position.

   Make sure that Mechanism and Cassette Up Ass'y are in the **EJECT** Position.(Refer to " **EJECT** Position Confirmation" in Disassembly/Assembly Procedures of Mechanism.)

5.1.7. Main C.B.A.

5.1.7.1. Disassembly Procedure

1. Disconnect 4 Connectors of P2531, P2552, P3501 and P4001.
2. Carefully lift the Mechanism Chassis and Cassette Up Ass'y straight out from the Main C.B.A.

Note:

Work carefully so as not to break Sensor LED, when lifting the Mechanism Chassis and Cassette Up Ass'y.

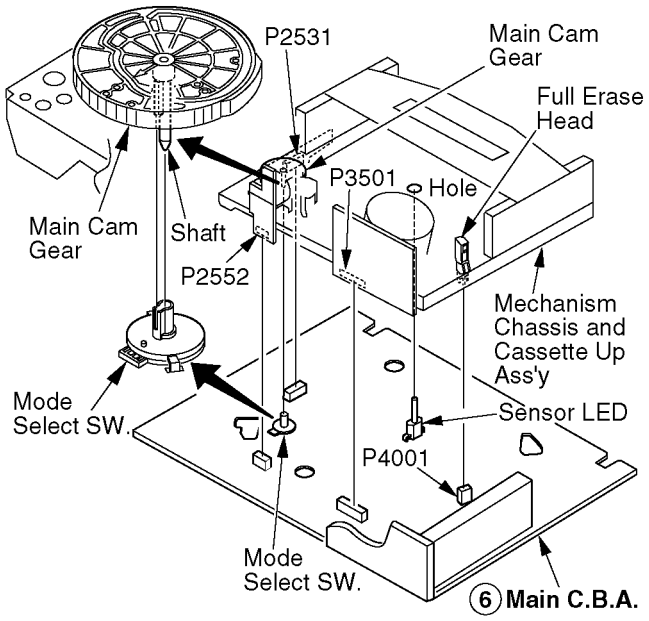


Fig. D7-1

5.1.7.2. Reassembly Notes

CAUTION

Installation of Mechanism Chassis and Cassette Up Ass'y onto Main C.B.A.

1. Make sure the Mode Select SW. on the Main C.B.A. is in **EJECT** position. If not, rotate the Mode Select SW. until the alignment projection is in the **EJECT** Position.
2. Make sure the Mechanism and Cassette Up Ass'y are in the **EJECT** Position. (Refer to "**EJECT** Position confirmation" of Mechanism Section in Disassembly/ Assembly Procedures.)

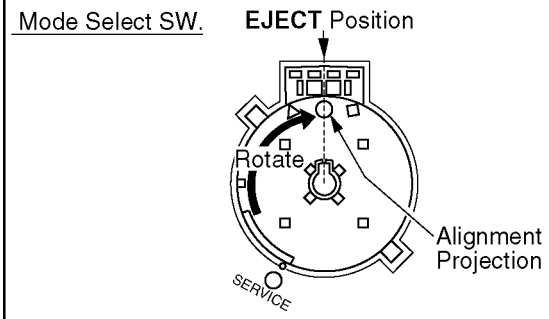


Fig. D7-2

3. Install the Mechanism Chassis and Cassette Up Ass'y straight onto the Main C.B.A. so that the Sensor LED clesrs the hole in the Mechanism Chassis and that 4 Connectors (P2531, P2552, P3501, and P4001) are aligned and seated securely.

Fig. D7-2

5.1.8. Cassette Up Ass'y

CAUTION:

Opener Lever may be damaged when Cassette Up Ass'y is removed, with Front Panel Ass'y attached.

Remove the Cassette Up Ass'y as follows:

5.1.8.1. Disassembly Procedure

1. Slide Holder Unit (refer to "METHOD FOR LOADING/UNLOADING OF MECHANISM" in Service Notes) to gain access to 2 Screws (J) for removal.
2. Remove Screw (K).
3. Unhook Spring (A).
4. Slide the Cassette Up Ass'y towards the front to release Locking Tab (J). Then, lift it up and remove.

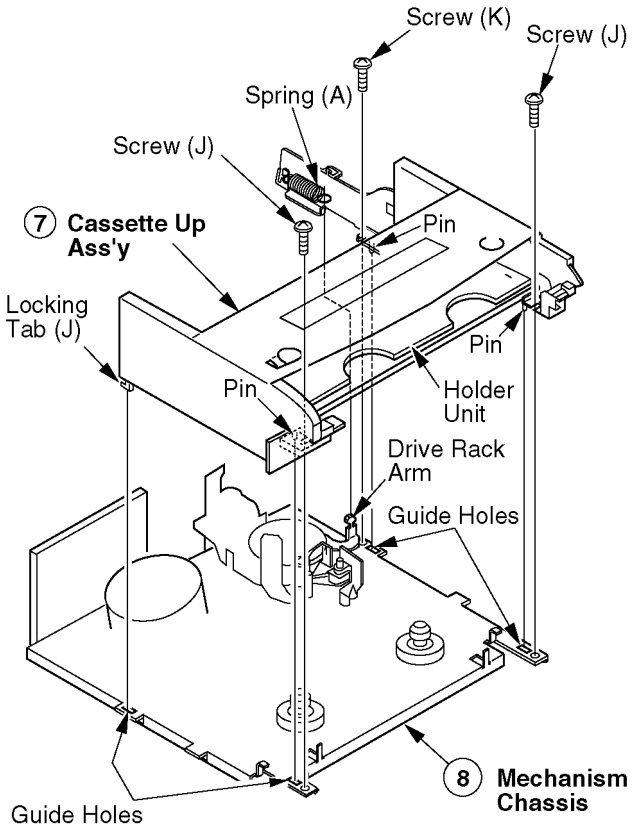


Fig. D8

5.1.8.2. Reassembly Notes

Installation of Cassette Up Ass'y

1. Confirm that the 3 pins and Locking Tab (J) under the Cassette Up Ass'y are in each of the 4 Guide Holes on the Mechanism Chassis when installing the Cassette Up Ass'y. Then, slide the Cassette Up Ass'y towards the back.
2. Slide Holder Unit (refer to "METHOD FOR LOADING/UNLOADING OF MECHANISM" in Service Notes) to tighten 2 Screws (J) and Screw (K).

   Be careful not to tighten screws too much, or the Cassette Up Ass'y may be bent outward.

   Then, slide it back to the **EJECT** Position.
3. Hook Spring (A) to the Drive Rack Arm on the Mechanism Chassis.

5.2. MECHANISM SECTION

5.2.1. Disassembly Method

This chart indicates Step/Location No. of Parts to be serviced and prior steps to gain access items to be serviced when disassembling.
When reassembling, perform the step(s) in the reverse order.

Step /Loc. No.	Part	Prior Step(s)	Step /Loc. No.	Part	Prior Step(s)	Step /Loc. No.	Part	Prior Step(s)	Step /Loc. No.	Part	Prior Step(s)
①	Cylinder Unit	----------	⑪	Main Lever Drive Arm	3, 4, 5, 7, 8, 9	㉑	Loading Post Base-S Unit	16	㉛	S Loading Arm Unit	30
②	Upper Cylinder Unit	----------	⑫	T Brake Unit	9	㉒	Loading Post Base-T Unit	9, 20	㉜	Center Clutch Unit	----------
③	Opener Piece	----------	⑬	Changing Lever A	9	㉓	Capstan Rotor Unit	----------	㉝	Changing Gear Spring	32
④	Pinch Arm Unit	3	⑭	T Reel Table	9, 12, 13	㉔	Capstan Holder Unit	23	㉞	Changing Gear	32, 33
⑤	Motor Block Ass'y	----------	⑮	Full Erase Head	----------	㉕	SS Brake Arm Unit	----------	㉟	Changing Lever-B	32, 33, 34
⑥	Audio Control Head Unit	5	⑯	Tension Arm Unit	----------	㉖	Junction C.B.A.	----------	㊱	Idler Arm Unit	32, 33, 34
⑦	Main Cam Gear	3, 4, 5	⑰	S Spring Arm	----------	㉗	Capstan Stator Unit	23, 25, 26	㊲	Loading Rack Unit	9, 30
⑧	Drive Rack Arm	3, 4, 5, 7	⑱	S Reel Table	16, 17	㉘	Sub Rotor	23, 25, 26, 27	㊳	Grounding Plate Unit	----------
⑨	Main Lever	----------	⑲	S Brake Arm Unit	9, 16, 17, 18	㉙	PCB Holder	23, 25, 26, 27	㊴	FG Head	----------
⑩	P5 Arm Unit	9	⑳	Main Lever Guide	9	㉚	T Loading Arm Unit	----------	㊵	Cleaner Arm Unit	----------

Step/Loc. No.: Order of steps in procedure. Part : Part to be removed or installed. Prior Step(s) : Steps to be completed prior to the current step.

Note: When the mechanical parts surrounded by rectangle are removed or replaced, be sure to perform necessary adjustment or alignment procedures according to the mechanical adjustment procedures section and disassembly/assembly procedures of mechanism section.

Perform all disassembly and alignments procedures in EJECT Position.

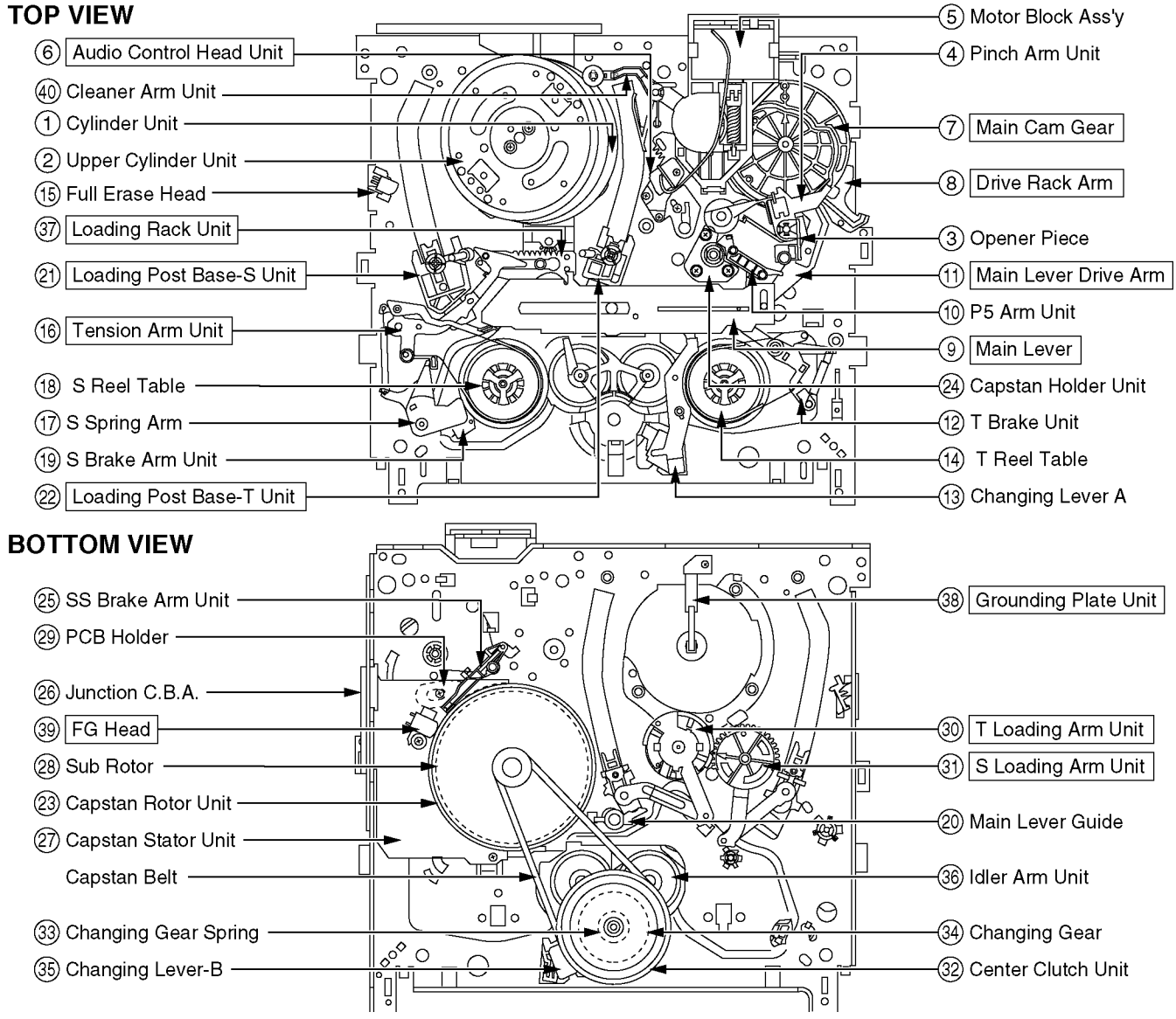


Fig. J1-1

5.2.2. EJECT Position Confirmation

Check the following alignment points to confirm that the Mechanism and Cassette Up Ass'y are in the **EJECT** Position from the top side.

By using alignment points ❖ 1 & ❖ 2, it is possible to roughly confirm the S & T Loading Arm Units from the top side, even though they are located on the bottom side of the mechanism chassis.

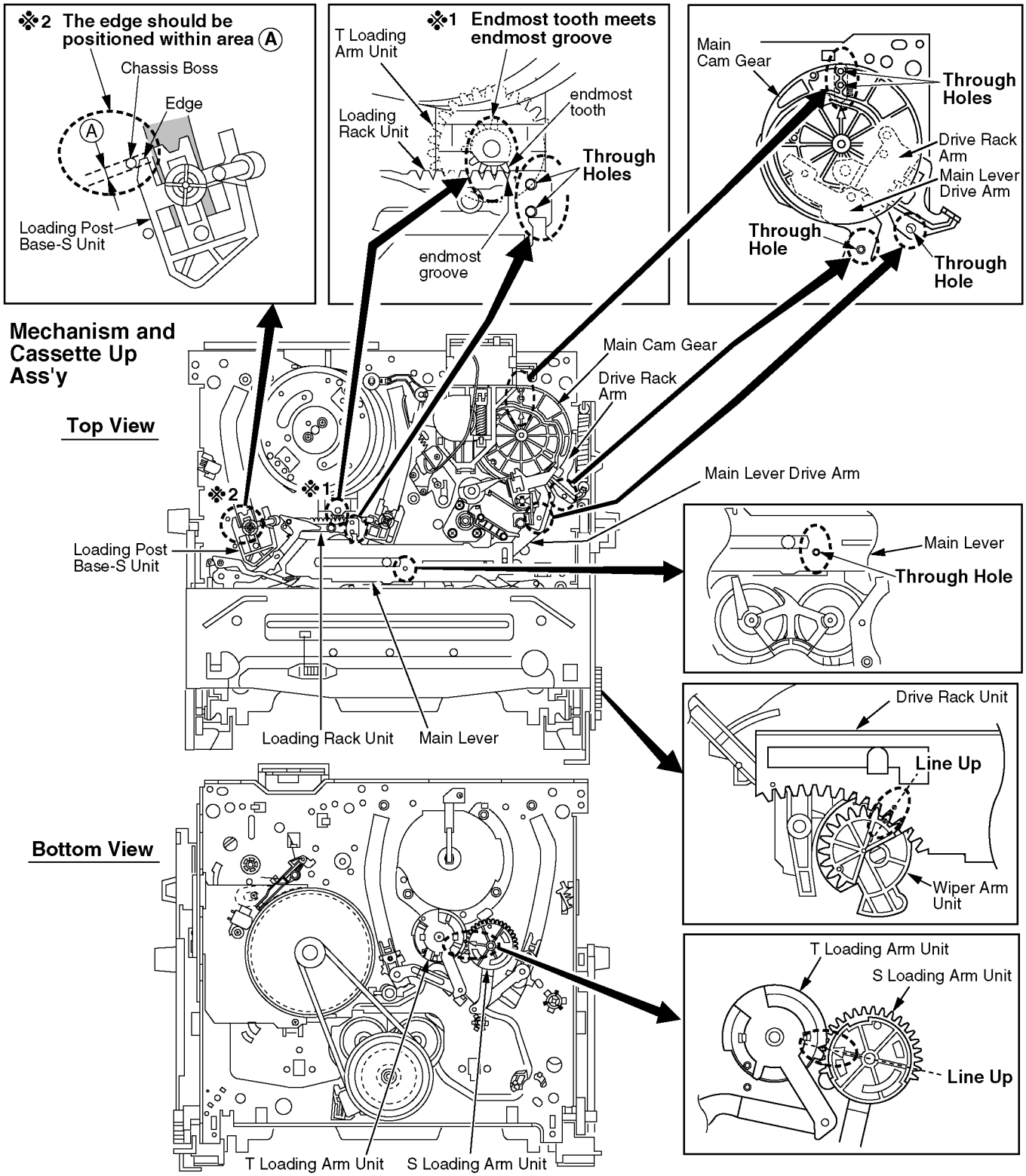


Fig. J1-2

5.2.3. Cylinder Unit

5.2.3.1. Disassembly Procedure

1. Remove 3 Screws (A) and 2 Screws with Washers (A). Then, lift the Cylinder Unit and the Head Amp C.B.A. out from the mechanism.
2. Unsolder P3502 and P3503. Then, remove the Head Amp C.B.A.

Note:

Use extreme care when removing or replacing the Cylinder Unit. Do not touch the Video Heads during servicing.

CAUTION:

When removing the Cylinder Unit, avoid touching IC2601 on the Head Amp C.B.A. because it is **HOT** during operation.

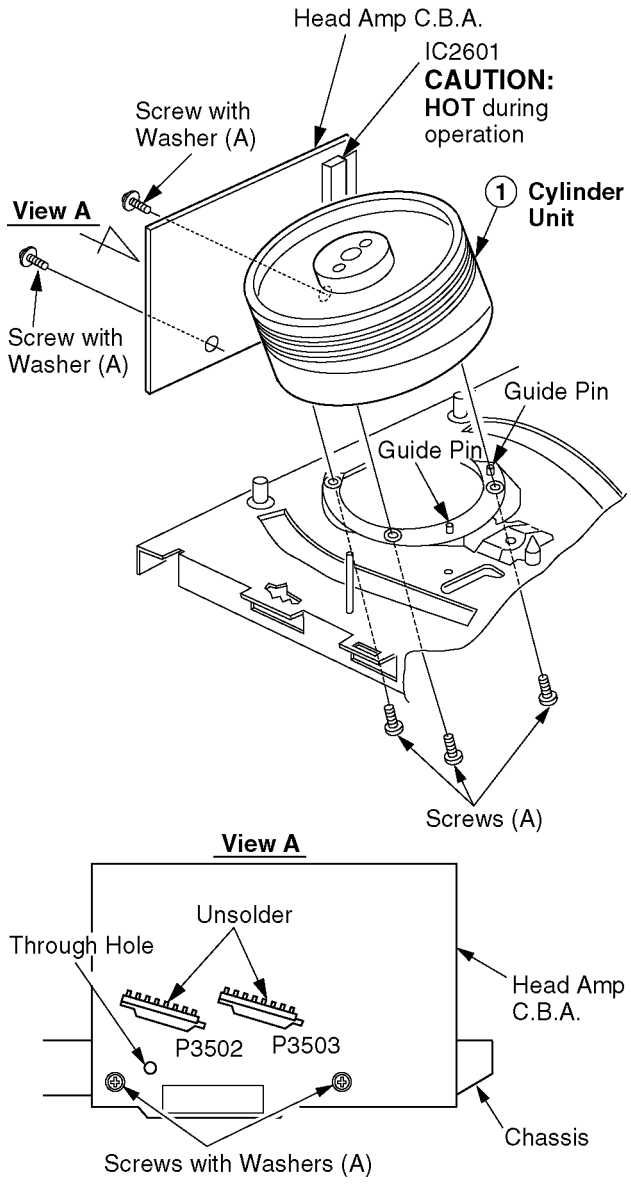


Fig. J2-1

5.2.3.2. Reassembly Notes

1. Use extreme care when removing or replacing the Cylinder Unit. Do not touch the Video Heads during servicing.
2. **Installation of Cylinder Unit**
   a. Install the Cylinder Unit so that the 2 holes on the lower surface of the Cylinder Unit fit over the 2 Guide Pins on the Cylinder Base and loosely secure it with 3 Screws (A).
   b. Install the Head Amp C.B.A. so that the hole on the Head Amp C.B.A. lines up with the hole on the chassis and secure it with 2 Screws with Washers (A).
   c. Position the Cylinder Unit so that foil patterns of connectors (P3502 and P3503) and Head Amp C.B.A. are aligned, and tighten 3 Screws (A).
   d. Solder connectors (P3502 and P3503).
3. **Adjustment of Grounding Plate Unit**
   a. After installing, make sure that the Grounding Plate Unit, on the bottom side of mechanism chassis, is positioned on the right side of the Cylinder shaft so that the center line of the plate is just less than 1.0 mm measured from the center of the Cylinder shaft.

   If required, adjust the plate position by loosening Black Screw (A).

   Never install the Grounding Plate Unit on the left side of the Cylinder shaft.

   Incorrect positioning will cause cylinder buzz.

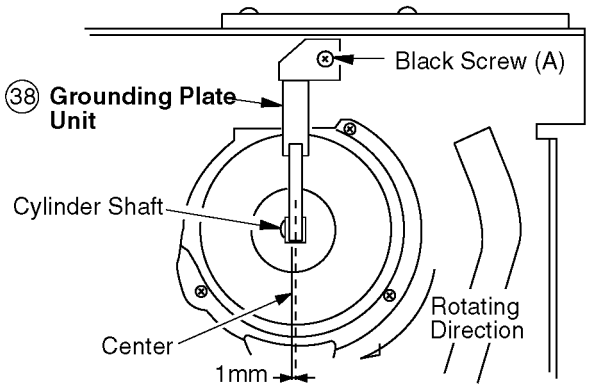


Fig. J2-2

   b. After installing, perform the "TAPE INTERCHANGEABILITY ADJUSTMENT (FINAL ADJUSTMENT)" procedures.

5.2.4. Upper Cylinder Unit

5.2.4.1. Disassembly Procedure

1. Remove 2 Screws with Washers (B).
2. Carefully lift the Upper Cylinder Unit from the shaft.

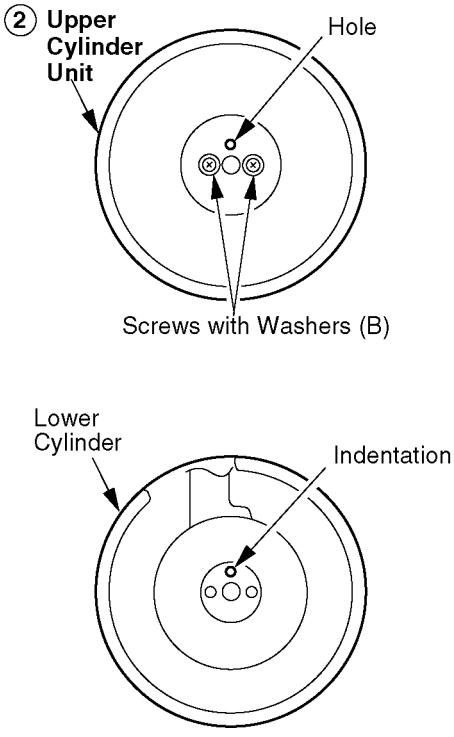


Fig. J3

Note:

Use extreme care when removing or replacing the Upper Cylinder Unit. Do not touch the Video Heads during servicing.

5.2.4.2. Reassembly Notes

1. Use extreme care when removing or replacing the Cylinder Unit. Do not touch the Video Heads during servicing.
2. **Alignment of Upper Cylinder Unit**
   a. When installing, make sure that the hole on the Upper Cylinder is aligned with the indentation on the Lower Cylinder.
   b. After installing, perform the "TAPE INTERCHANGEABILITY ADJUSTMENT (FINAL ADJUSTMENT)" procedures.

5.2.5. Opener Piece, Pinch Arm Unit, Motor Block Ass'y, Audio Control Head Unit, and Cleaner Arm Unit

5.2.5.1. Disassembly Procedure

1. Remove the Opener Piece by pulling it upward while releasing 2 Locking Tabs (A).
2. Pull up on the Pinch Arm Unit.
3. Release 3 Locking Tabs (B) and remove Screw with Washer (C). Then, remove the Motor Block Ass'y and Audio Control Head Unit.
4. Remove the Cleaner Arm Unit by pulling it upward while releasing Locking Tab (L).

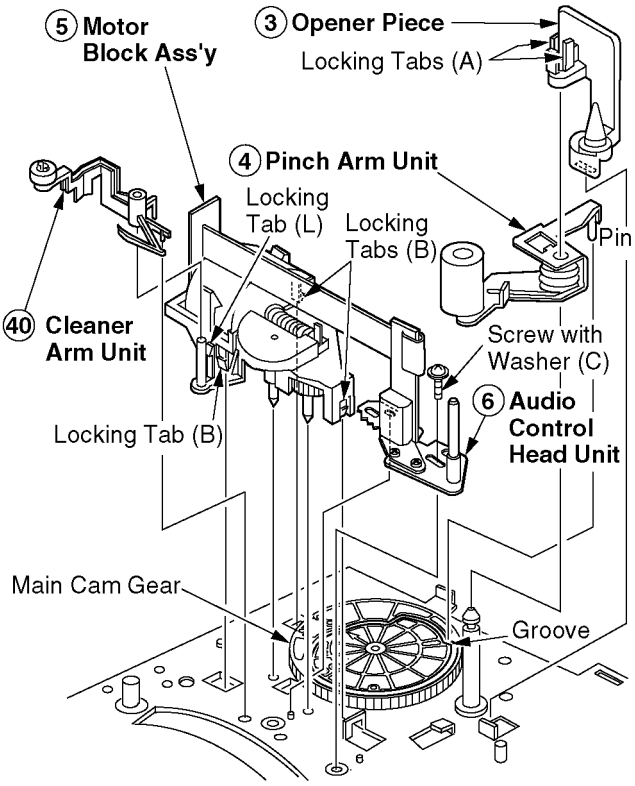


Fig. J4

5.2.5.2. Reassembly Notes

1. **Installation of Audio Control Head Unit**
   a. Install the Audio Control Head Unit before Motor Block Ass'y.
   b. After installing, perform the "TAPE INTERCHANGEABILITY ADJUSTMENT (FINAL ADJUSTMENT)" procedures.
2. **Installation of Pinch Arm Unit**
   a. Install the Pinch Arm Unit so that the Pin of Pinch Arm Unit fits in the groove of Main Cam Gear.

5.2.6. Main Cam Gear and Drive Rack Arm

5.2.6.1. Disassembly Procedure

1. Remove the Main Cam Push Nut. (Refer to Note.)
2. Pull up on the Main Cam Gear.
3. Turn the Drive Rack Arm fully counterclockwise as shown.
4. Pull up on the Drive Rack Arm.

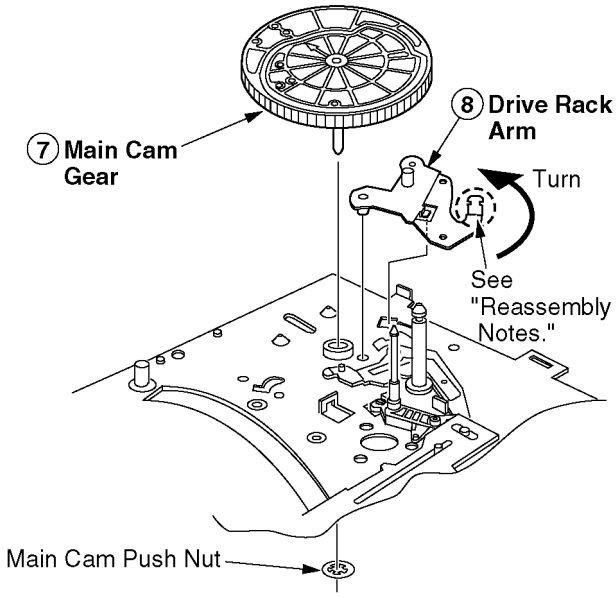


Fig. J5-1

Note:

When removing the Main Cam Push Nut, press the Main Cam Gear to make space between the Main Cam Push Nut and Bottom of Chassis. Then, remove the Main Cam Push Nut using a screwdriver etc.

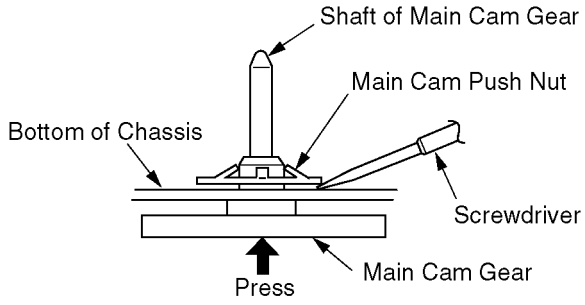


Fig. J5-2

5.2.6.2. Reassembly Notes

1. **Alignment of Main Cam Gear, Drive Rack Arm, and Main Lever Drive Arm**

   a. Confirm that the hole (C) on the Main Lever Drive Arm is aligned with the hole on chassis (Through hole (C)) as shown.

   b. Install the Drive Rack Arm so that the hole (A) is aligned with the hole on chassis (Through hole (A)) as shown.

   c. Install the Main Cam Gear so that the 2 holes (B) marked "E" are aligned with the hole on chassis (Through hole (B)) as shown. ("E" indicates the **EJECT** position.)

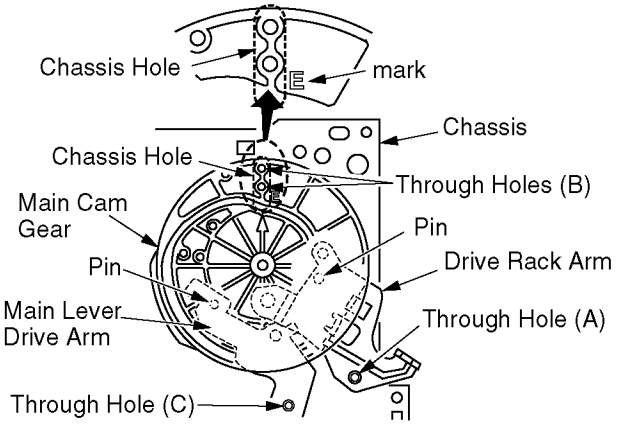


Fig. J5-3

2. **Holes on Main Cam Gear**

   a. The holes on Main Cam Gear should be aligned with the hole on chassis in each mode (Through hole) as shown.

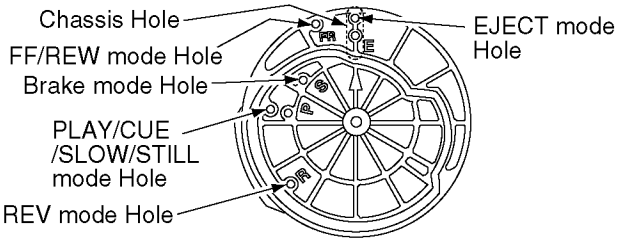


Fig. J5-4

3. **Main Cam Gear Kit**

   a. Main Cam Gear is supplied as a Main Cam Gear Kit only (Kit No. VVGS0008).

   Main Cam Gear Kit consists of a Main Cam Gear and a Main Cam Push Nut.

   However, Main Cam Push Nut is available separately as a replacement part.

4. **Installation of Main Cam Gear and Main Cam Push Nut**

   a. Position the chassis upside down and place a Support under the Main Cam Gear.

   Install the Main Cam Push Nut with Needlenose Pliers etc. so that it is flush with the chassis.

   There may be some slight scratches on the Shaft of Main Cam Gear, when removing the Main Cam Gear. In case that the Main Cam Gear can be installed securely without tottering, it is fine to use the one. If any tottering, install all new parts.

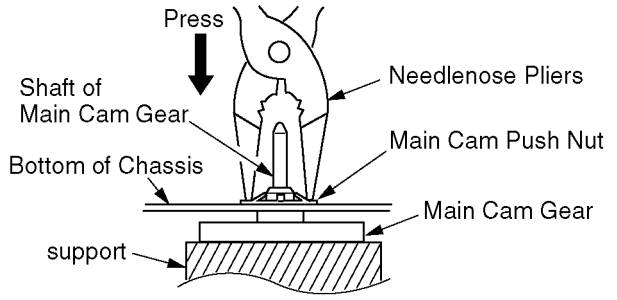


Fig. J5-5

5. The Main Cam Push Nut is not reusable. Install a new one.

6. Make sure to hook Spring (A) of the Cassette Up Ass'y to the Drive Rack Arm. Refer to "Cassette Up Ass'y" in "Disassembly/Assembly Procedures of Cabinet."

5.2.7. Main Lever

5.2.7.1. Disassembly Procedure

1. Release 2 Locking Tabs (C) and Locking Tab (D). Then, remove the Main Lever.

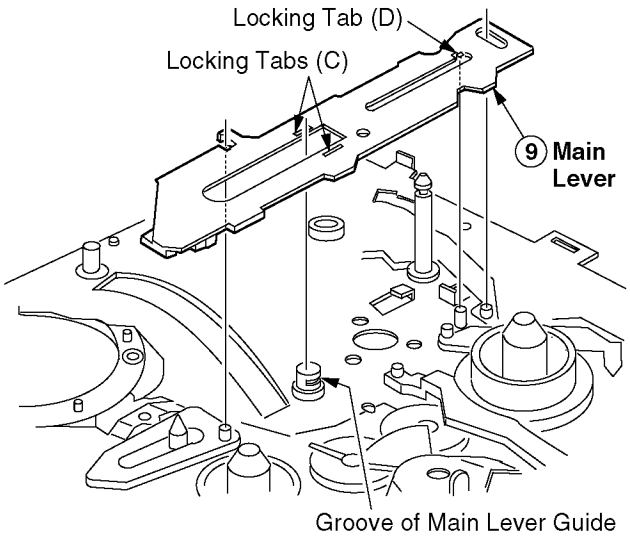


Fig. J6-1

5.2.7.2. Reassembly Notes

1. **Installation/Alignment of Main Lever**
   a. Make sure that the 2 holes of Loading Rack Unit are aligned with the holes on chassis (Through holes).
   b. Turn the P5 Arm Unit to the Capstan Rotor Unit Shaft side.
   c. Turn the T Brake Unit to the T Reel Table side.
   d. Position the Main Lever so that the Loading Rack Unit Pin fits in the niche of Main Lever.

      Confirm that pins and bosses are in the position and that the hole of Main Lever is aligned with the hole on chassis (Through hole) as shown. Then, install the Main Lever.
   e. Push down the Locking Tabs (C) to set in the groove of Main Lever Guide.

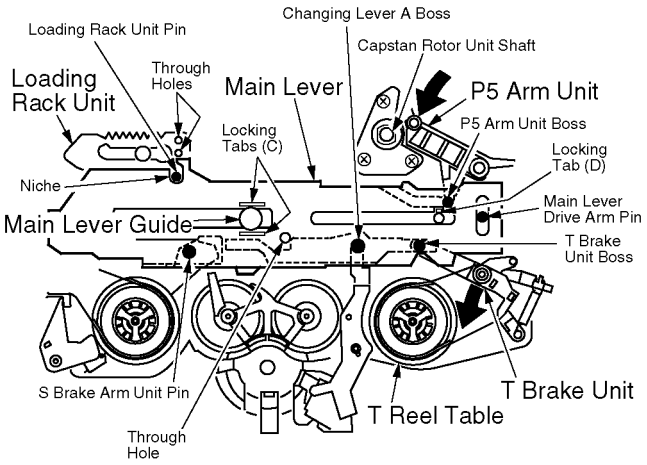


Fig. J6-2

5.2.8. P5 Arm Unit and Main Lever Drive Arm

5.2.8.1. Disassembly Procedure

1. Pull up on the P5 Arm Unit.
2. Turn the Main Lever Drive Arm fully counterclockwise as shown.
3. Pull up on the Main Lever Drive Arm.

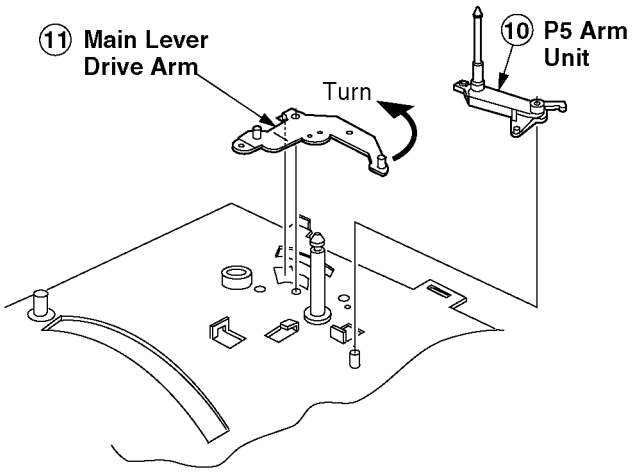


Fig. J7-1

5.2.8.2. Reassembly Notes

1. **Alignment of Main Lever Drive Arm**
   a. Install the Main Lever Drive Arm so that the hole (C) is aligned with the hole on the chassis Through hole (C)) as shown.

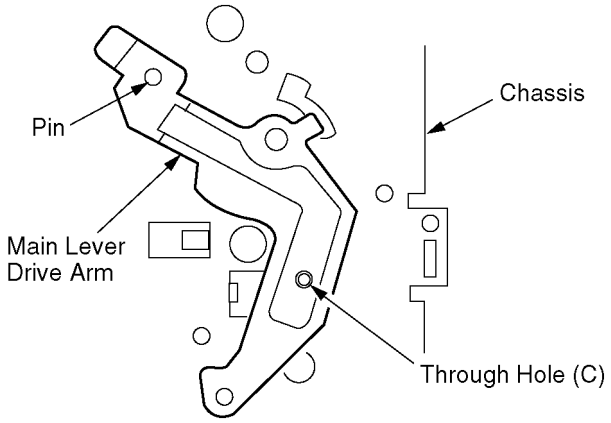


Fig. J7-2

5.2.9. T Brake Unit, Changing Lever A, and T Reel Table

5.2.9.1. Disassembly Procedure

1. Remove the T Brake Unit while releasing Locking Tab (E) located under the chassis.
2. Remove Cut Washer (A). Then, pull up on the Changing Lever A and remove.
3. Pull up on the T Reel Table.

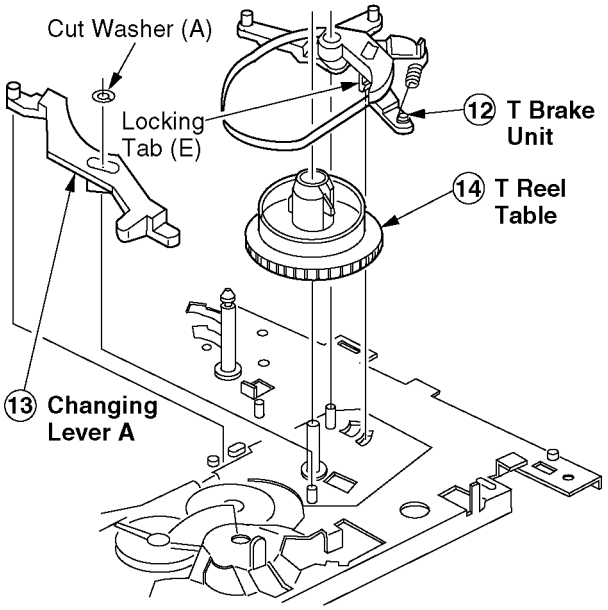


Fig. J8-1

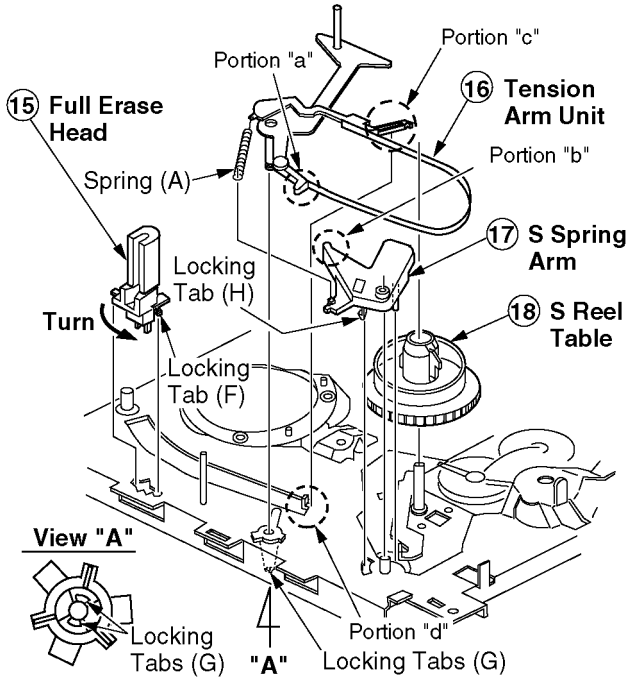


Fig. J9-1

5.2.9.2. Reassembly Notes

1. **How to distinguish between S Reel Table and T Reel Table**

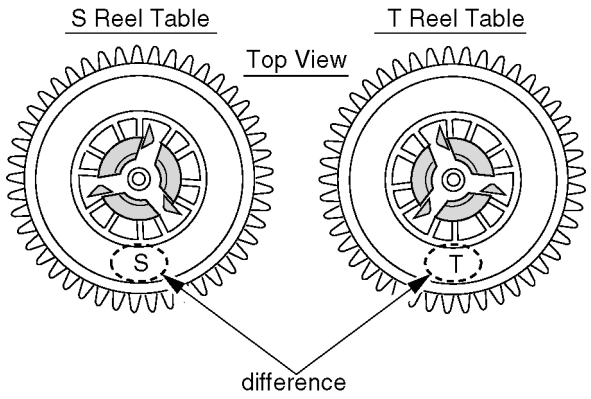


Fig. J8-2

2. Cut Washer (A) is not reusable. Install a new one.

5.2.10. Full Erase Head, Tension Arm Unit, S Spring Arm, and S Reel Table

5.2.10.1. Disassembly Procedure

1. Turn the Full Erase Head fully counterclockwise while releasing Locking Tab (F) as shown. Then remove it.
2. Unhook Spring (A).
3. Remove the Tension Arm Unit by pulling it up while releasing 2 Locking Tabs (G).
4. Remove the S Spring Arm while releasing Locking Tab (H).
5. Pull up on the S Reel Table.

5.2.10.2. Reassembly Notes

1. **Confirmation/Adjustment of Tension Arm Unit**

   a. When installing Tension Arm Unit and S Spring Arm, confirm "a," "b," "c," and "d" portion are in the proper position as shown.

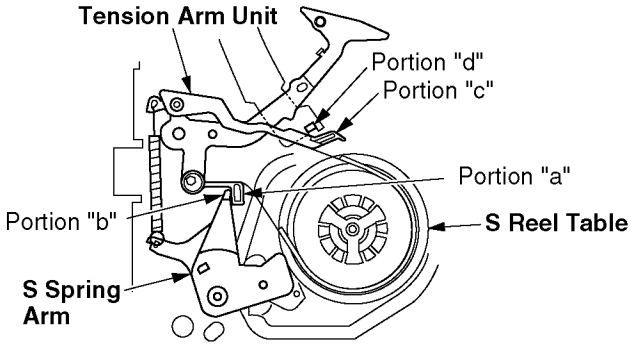


Fig. J9-2

   b. After installing, perform the "TENSION POST ADJUSTMENT" procedures.

5.2.11. S Brake Arm Unit, Main Lever Guide, Loading Post Base -S, and Loading Post Base -T Unit

5.2.11.1. Disassembly Procedure

1. Remove the S Brake Arm Unit while releasing 2 Locking Tabs (I).
2. Remove the Main Lever Guide while releasing Locking Tab (J).
3. Slide the Loading Post Base -S and T Units to the end of the guide slots to remove.

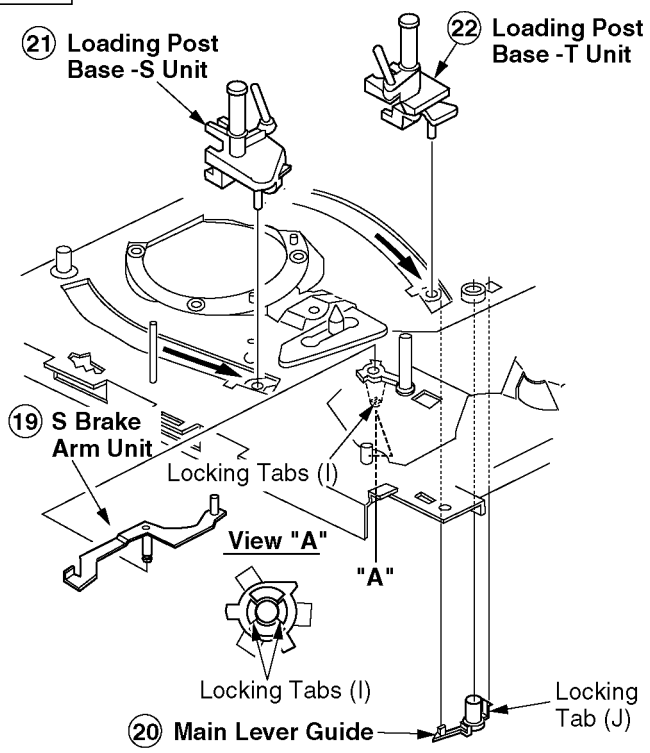


Fig. J10

5.2.11.2. Reassembly Notes

1. **Adjustment of Loading Post Base -S Unit and Loading Post Base -T Unit**
   a. After installing, perform the "P2 AND P3 POST HEIGHT ADJUSTMENT (PRELIMINARY ADJUSTMENT)" procedures and "TAPE INTERCHANGEABILITY ADJUSTMENT (FINAL ADJUSTMENT)" procedures.

5.2.12. Capstan Rotor Unit, Capstan Holder Unit, and SS Brake Arm Unit

5.2.12.1. Disassembly Procedure

1. Remove the Capstan Belt.
2. Cut the Stopper with a cutter to remove.
3. Pull up on the Capstan Rotor Unit.
4. Remove 3 Screws (B). Then remove the Capstan Holder Unit.
5. Unhook Spring (B).
6. Turn the SS Brake Arm Unit so that the Tab (A) lines up with the niche. Then, remove the SS Brake Arm Unit.

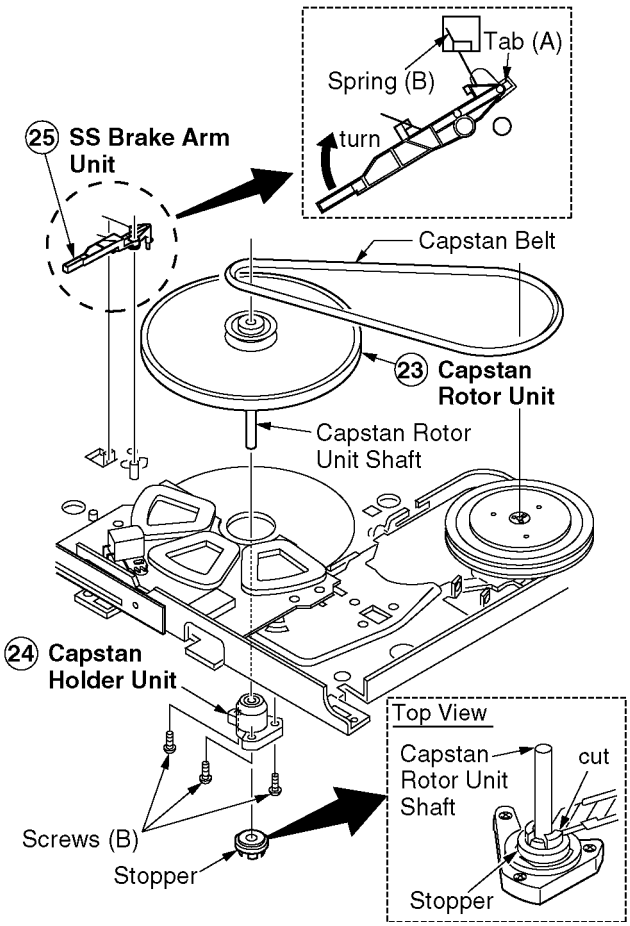


Fig. J11-1

5.2.12.2. Reassembly Notes

1. **Installation of Capstan Rotor Unit**
   a. Insert the Capstan Rotor Unit Shaft into the hole of the Capstan Holder Unit.
   b. Place a support under the Capstan Rotor Unit shaft. Install the Stopper. Be careful not to scratch the shaft or Capstan Holder Unit.
   c. Remove the support. Press the top end of the shaft down so that the Stopper is properly positioned.
   You should be able to move the shaft up and down slightly when properly positioned.

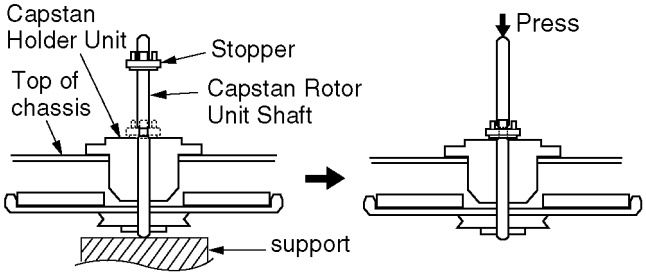


Fig. J11-2

2. **Capstan Rotor Kit**
   a. Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Rotor Kit only. (Kit No. VXPS0382K2) They are not reusable. Install all new parts.
   b. Because even invisible scratches on the Capstan Rotor Unit shaft and the Capstan Holder Unit, made when cutting the Stopper, could cause tape path instability.

5.2.13. Junction C.B.A., Capstan Stator Unit, Sub Rotor, and PCB Holder

5.2.13.1. Disassembly Procedure

1. Remove 2 Screws (C).
2. Unsolder P2532 on the Junction C.B.A. Then, remove the Junction C.B.A.
3. Remove Screw (D) and 2 Screws with Washers (D), (E). Then, remove Capstan Stator Unit, Sub Rotor, and PCB Holder.

CAUTION:

When removing Capstan Stator Unit, avoid touching IC2501 on the Capstan Stator Unit because it is **HOT** during operation.

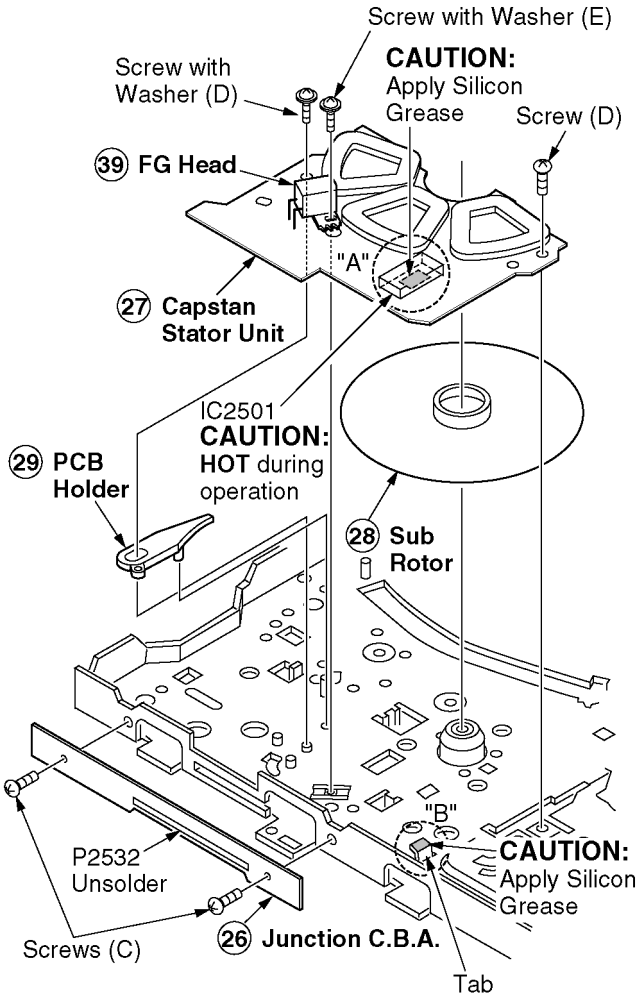


Fig. J12-1

5.2.13.2. Reassembly Notes

1. **Application of Silicon Grease**

CAUTION

When installing the IC2501 or Capstan Stator Unit, be sure to apply Silicon Grease (VFK1301) as shown. Be careful not to touch other parts with greased portion to prevent grease depletion.

Silicon Grease Application

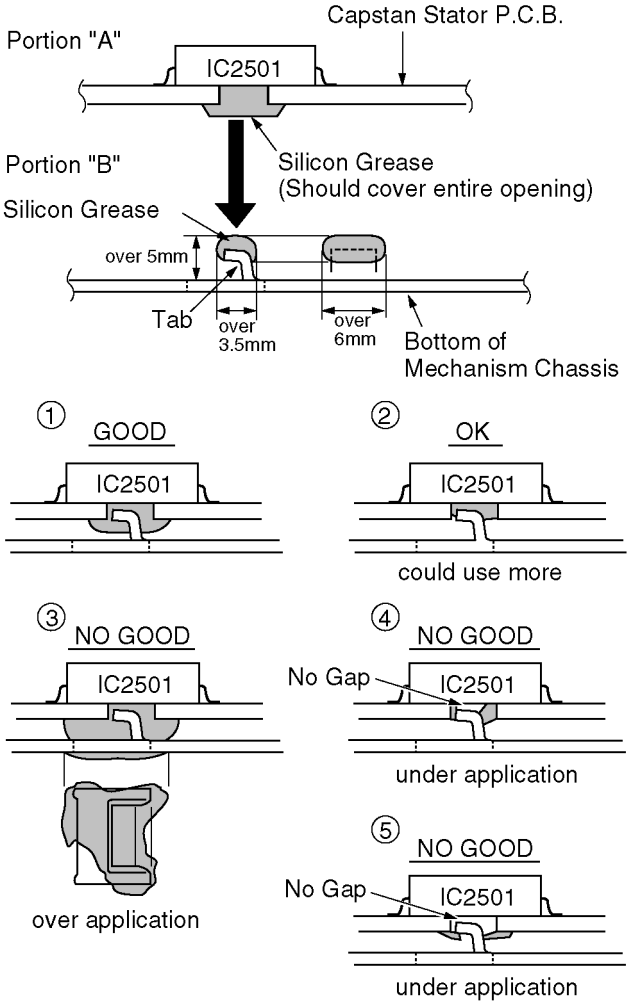


Fig. J12-2

2. **Capstan Stator Kit**

   a. Capstan Stator Unit, Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Stator Kit only (Kit No. VEMS0316K2).

   However, IC2501(AN3845SC) is available separately as a replacement part.

   Capstan Rotor Unit, Capstan Holder Unit, and Stopper are not reusable. Install all new parts.

   Because even invisible scratches on the Capstan Rotor Unit shaft and the Capstan Holder Unit, made when cutting the Stopper, could cause tape path instability.

3. **Adjustment of FG Head**

   a. After installing, perform the "FG HEAD GAP ADJUSTMENT" procedures.

5.2.14. T Loading Arm Unit and S Loading Arm Unit

5.2.14.1. Disassembly Procedure

1. Remove the T Loading Arm Unit by pulling it up while releasing Locking Tab (K).
2. Pull up on the S Loading Arm Unit.

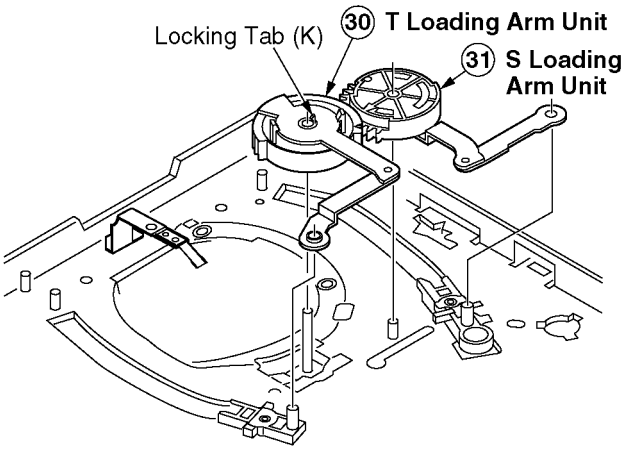


Fig. J13-1

5.2.14.2. Reassembly Notes

1. **Alignment of Loading Rack Unit, T Loading Arm Unit, and S Loading Arm Unit**
   a. Slide the Loading Rack Unit so that the holes on it and the holes on the chassis line up properly.
   b. Install the S Loading Arm Unit onto the Chassis.
   c. Install the T Loading Arm Unit so that the triangle-shaped indent is aligned with the arrow on the S Loading Arm Unit as shown. Confirm that each hole on the T Loading Arm Unit, Chassis, and Loading Rack Unit are through holes.

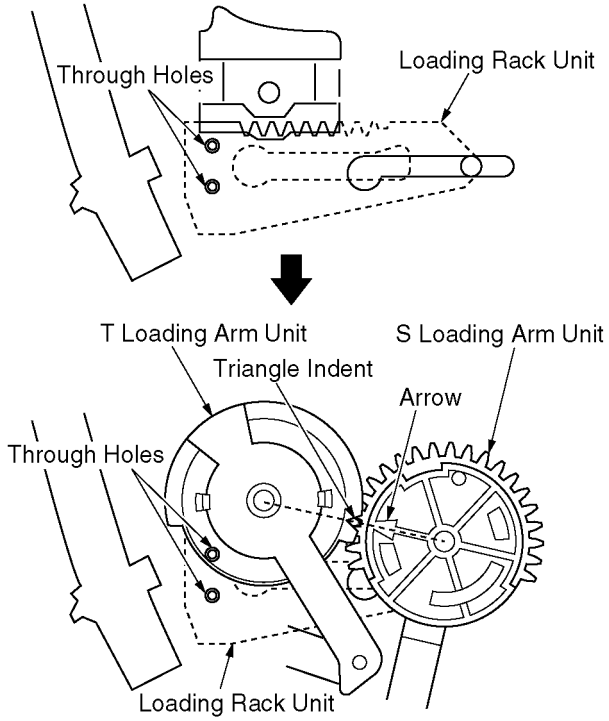


Fig. J13-2

5.2.15. Center Clutch Unit, Changing Gear Spring, Changing Gear, Changing Lever-B, and Idler Arm Unit

5.2.15.1. Disassembly Procedure

1. Remove Cut Washer (B). Then remove the Center Clutch Unit, Changing Gear Spring, and Changing Gear.
2. Remove Changing Lever -B so that the 2 Mounting Holes clear Mounting Pins.
3. Pull up on the Idler Arm Unit.

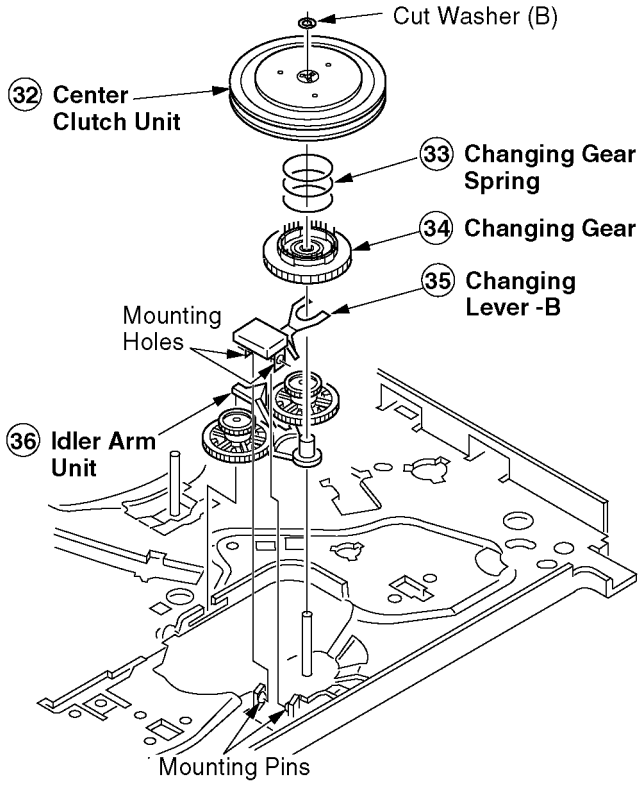


Fig. J14-1

5.2.15.2. Reassembly Notes

1. **Installation of Center Clutch Unit**
   a. Fit the Center Clutch Unit into the Changing Gear as shown.

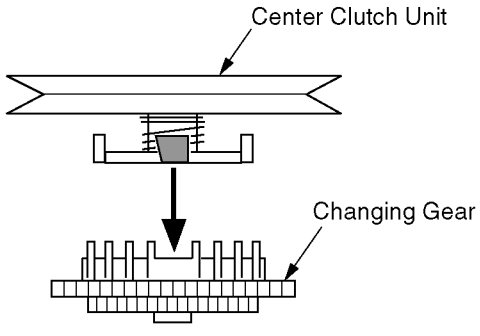


Fig. J14-2

2. Cut Washer (B) is not reusable. Install a new one.

5.2.16. Loading Rack Unit

5.2.16.1. Disassembly Procedure

1. Slide the Loading Rack Unit as indicated by the arrow. Then, pull up on the Loading Rack Unit.

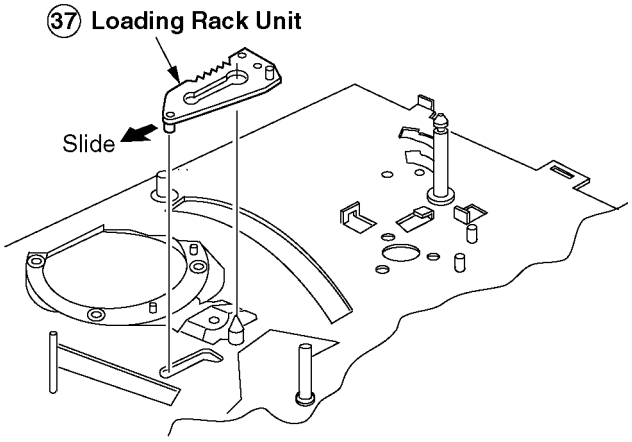


Fig. J15

5.2.16.2. Reassembly Notes

1. **Alignment of Loading Rack Unit**
   a. When installing Loading Rack Unit, refer to Reassembly Notes of "T Loading Arm Unit and S Loading Arm Unit."

5.3. DISASSEMBLY/ASSEMBLY PROCEDURES OF CASSETTE UP COMPARTMENT SECTION

5.3.1. Top Plate, Wiper Arm Unit, and Holder Unit

5.3.1.1. Disassembly Procedure

1. Remove Top Plate by releasing 2 Locking Tabs (A) on the left side and 2 Locking Tabs (B) on the right side of the Top Plate.
2. Remove Wiper Arm Unit by releasing 2 Locking Tabs (C). Then, remove the Holder Unit.

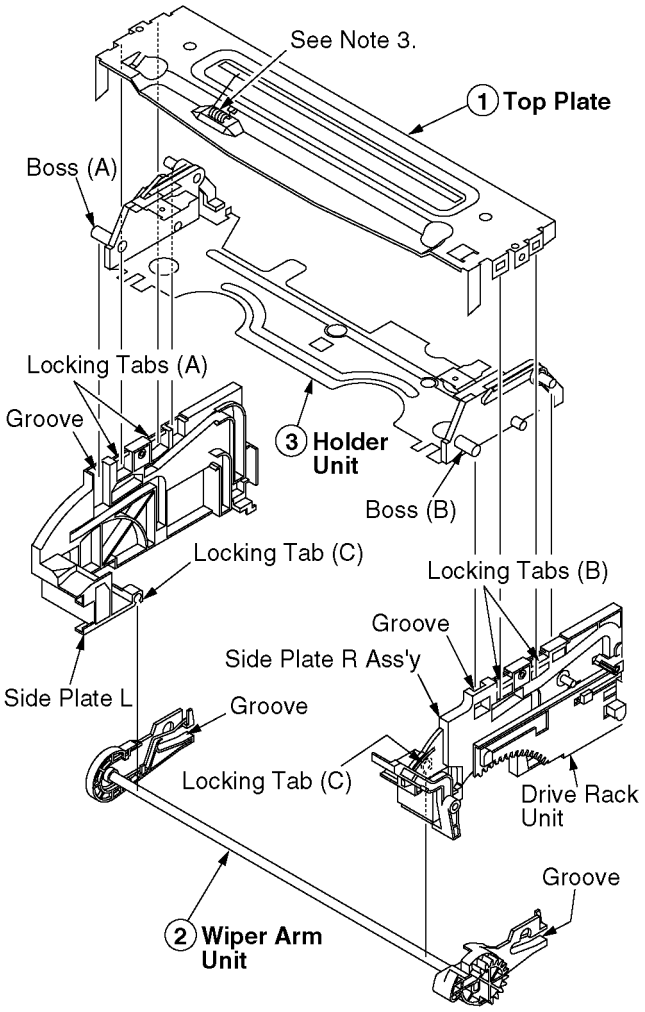


Fig. K1-1

5.3.1.2. Reassembly Notes

1. **Alignment of Wiper Arm Unit and Drive Rack Unit**
   a. Slide the Drive Rack Unit to the far right as indicated by the arrow.
   b. Install the Wiper Arm Unit so that the hole on the Wiper Arm Unit is aligned with the hole on the Drive Rack Unit.

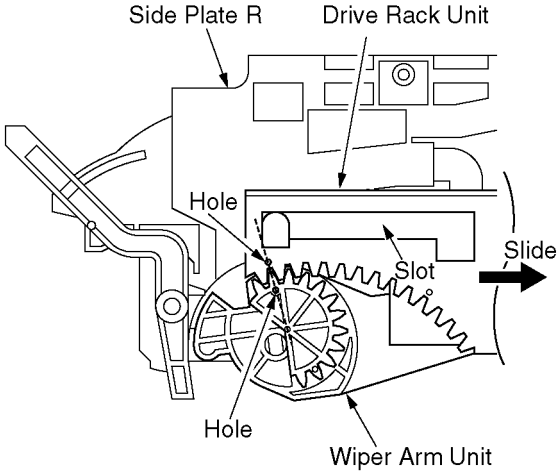


Fig. K1-2

2. **Installation of Holder Unit**

   a. Turn the Wiper Arm Unit so that the grooves on each end are aligned with the each groove on Side Plate L and R.

   b. Insert Holder Unit boss (A) and (B) into the grooves (See Fig. K1-1 on previous page).

   c. Finally, in the EJECT Position, confirm that the protrudence on the Wiper Arm Unit is aligned with the indentation on the Drive Rack Unit.

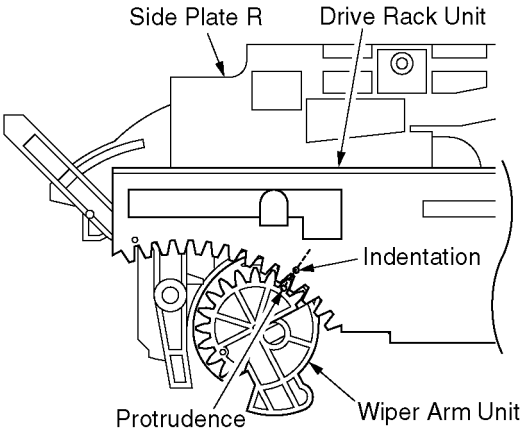


Fig. K1-3

3. As an ESD countermeasure, make sure the spring is in contact with Top Cover.

5.3.2. Sensor Cover, Opener Lever, and Drive Rack Unit

5.3.2.1. Disassembly Procedure

1. Remove the Sensor Cover by releasing Locking Tab (D).
2. Remove the Opener Lever by releasing 2 Locking Tabs (E). Then remove the Drive Rack Unit.

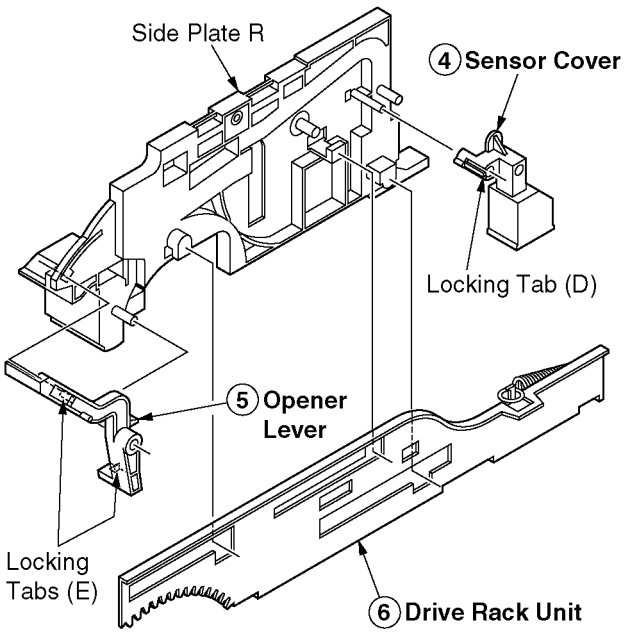
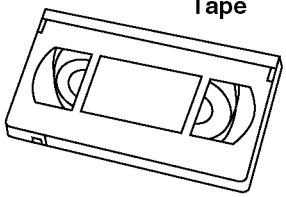


Fig. K2

6 ADJUSTMENT PROCEDURES

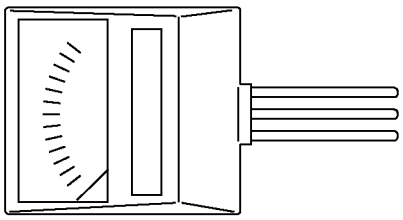
6.1. SERVICE FIXTURES AND TOOLS

VFMS0003H6 **VHS Alignment Tape**

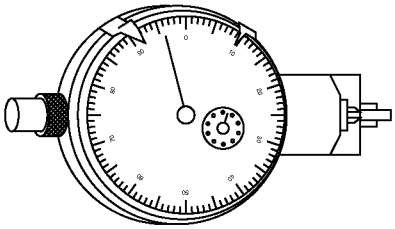


Video	Color Bar & Monoscope
Audio	6kHz(MONO)

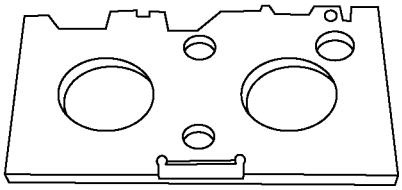
Back Tension Meter
(Made in USA., Purchase Locally)



VFKS0009 **Reel Table Height Fixture**

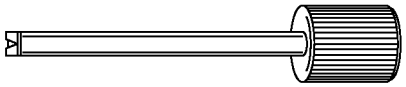


VFKS0010 **Post Adjustment Plate**

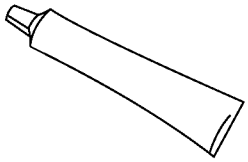


VFKS0081 **Grease**

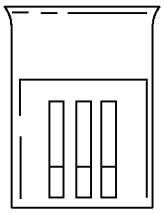
VFK0329 **Post Adjustment Driver**



VFK1301 **Silicon Grease**



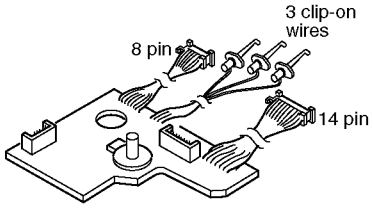
VFK27 **Head Cleaning Stick**



VFK0330 **H-Position Adjustment Driver**

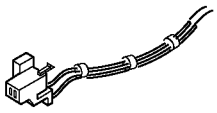
VUZS0002

Mode Select SW. Ass'y
(VUVS0001)

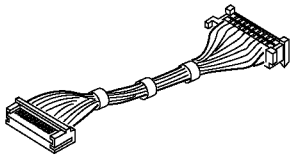


Extension Cable Kit

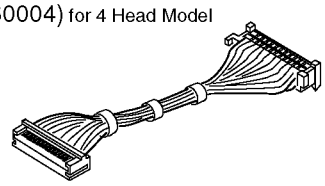
Extension Cable -1
(VUVS0002)



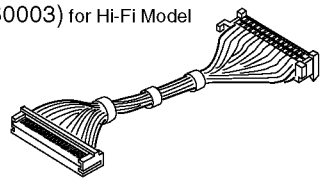
Extension Cable -2
(VUVS0005) for 2 Head Model



Extension Cable -2
(VUVS0004) for 4 Head Model



Extension Cable -2
(VUVS0003) for Hi-Fi Model



6.2. MECHANICAL ADJUSTMENT

6.2.1. CLEANING PROCEDURE FOR THE UPPER CYLINDER UNIT

1. While slowly turning the Upper Cylinder Unit counterclockwise by hand, gently rub the Video Heads with a Head Cleaning Stick (VFK27) moistened with Ethanol.

   When using a Cleaning Cassette, make sure to use "DRY" type only and be aware that excessive use can shorten head life.

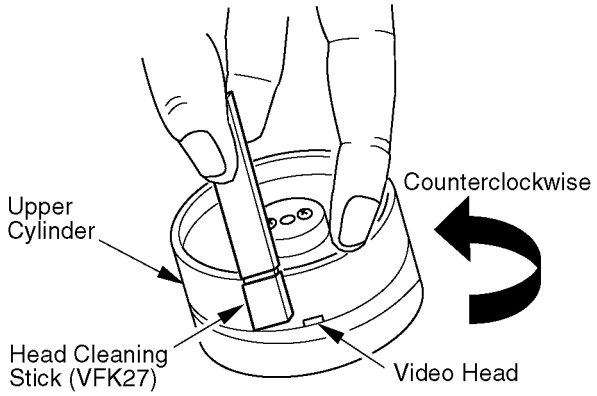


Fig. M1

Note:

a. Do not rub vertically or apply excess pressure to the Video Heads.

   Do not turn the Upper Cylinder Unit clockwise while cleaning.

b. After cleaning, use a Dry Head Cleaning Stick (VFK27) to remove any Ethanol remaining on the cylinder tape path. Otherwise, tape damage will occur.

6.2.2. ADJUSTMENT PROCEDURES

6.2.2.1. TENSION POST ADJUSTMENT

Purpose:	To maintain a constant tape tension so that the tape runs with stability by performing preliminary adjustment.
Symptom of Misadjustment:	1) If the adjusted value is below the specification, the tape tension is not sufficient, thus causing a tape slack. 2) If the adjusted value is above the specification, the tape tension is too high, thus causing tape damage.
Equipment Required:	2 mm Hex. Wrench (Purchase Locally)

1. Remove the Cassette Up Ass'y.
2. Plug the AC plug into an AC outlet.
3. Place the unit in the Service Mode. Refer to "SERVICE MODE" in the "Service Notes" section of this manual.

   The power comes on and the unit goes into the PLAY Mode.
4. Using a (2 mm) Hex. Wrench, adjust the nut on the Tension Adjust Piece (counterclockwise only) so that there is a space of 1 mm between the left edge of the P1 Post and the right edge of the Tension Post. Make sure that the center of the Hex. Wrench hole is within Area "A".
5. After adjustment, remove the Hex. Wrench.
6. Press the STOP/EJECT button to place the unit in the EJECT Mode.
7. Release the unit from the Service Mode. Refer to "SERVICE MODE" in the "Service Notes" section of this manual.

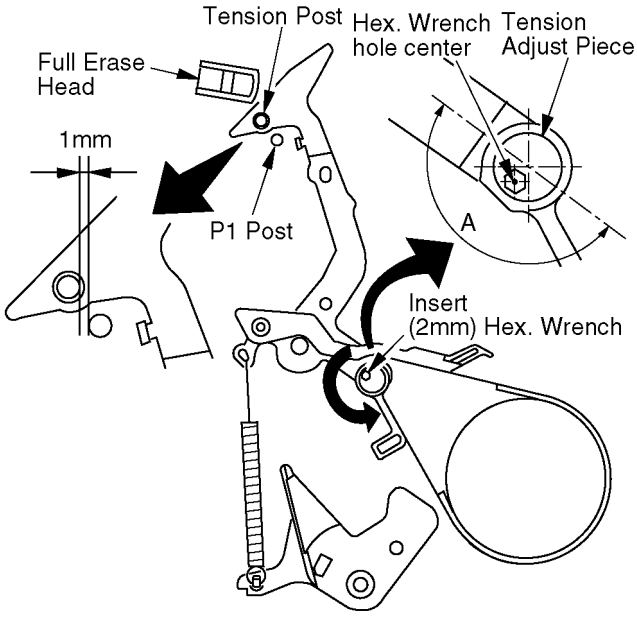


Fig. M2

6.2.2.2. BACK TENSION CONFIRMATION

Purpose: To fine adjust the Back Tension so that the tape runs smoothly with a constant tension.

Symptom of Misadjustment: 1) If the tape tension is less than the specified value, the tape cannot come into proper contact with the Video Heads, resulting in poor picture playback.

2) If the tape tension is too high, the tape will soon be damaged.

Measurement Procedure

Equipment Required: Back Tension Meter (Made in U.S.A., Purchase Locally)

VHS Cassette Tape (120-Minute Tape)

Specification 25 +/- 2.5g

1. Play back a T120 cassette tape from the beginning for approx. 10 to 20 seconds to stabilize tape movement.
2. Insert a Tension Meter into tape path and measure the back tension.
3. If the reading is out of specification, make sure that there is no dust or foreign material between the Tension Band of Tension Arm Unit and the Reel Table.

   If cleaning does not correct the tension measurement, replace the Tension Spring and the Tension Arm Unit.

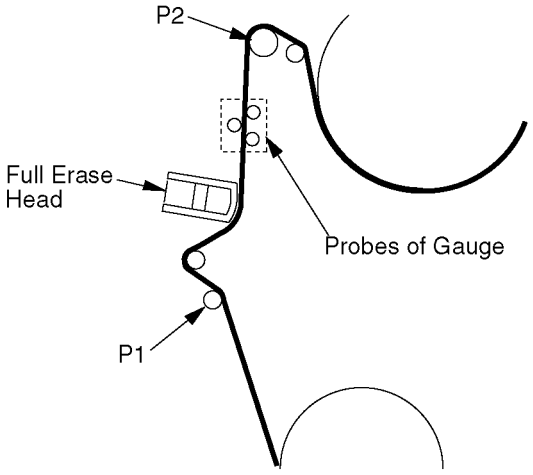


Fig. M3-1

Note:

1) Be sure that the three probes of the meter are all in solid contact with the tape, but not touching any other parts of the mechanism.

2) It is recommended that measurements be repeated at least three (3) times because the tension meter is very sensitive to external vibrations.

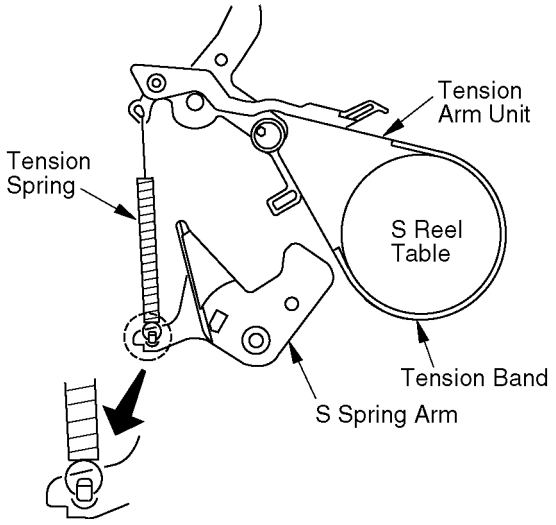


Fig. M3-2

6.2.2.3. FG HEAD GAP ADJUSTMENT

Purpose: To properly pick up the FG Signal.

Symptom of Misadjustment: If the FG Signal is not properly picked up, Servo Operation cannot be achieved.

Equipment Required: Oscilloscope

Specification 0.13 +/- 0.02mm

1. Remove the VCR Chassis Unit and then place it upside down.
2. Remove the Main C.B.A.
3. Slightly loosen Black Screw (A). Then set the Screwdriver (#1 or #2 Phillips Driver) into the Hole (A). Turn the screwdriver counterclockwise until the FG Head touches the rotor. Then turn it slightly clockwise to the clearance as specified.
4. Tighten Black Screw (A).
5. Reinstall the Main C.B.A.

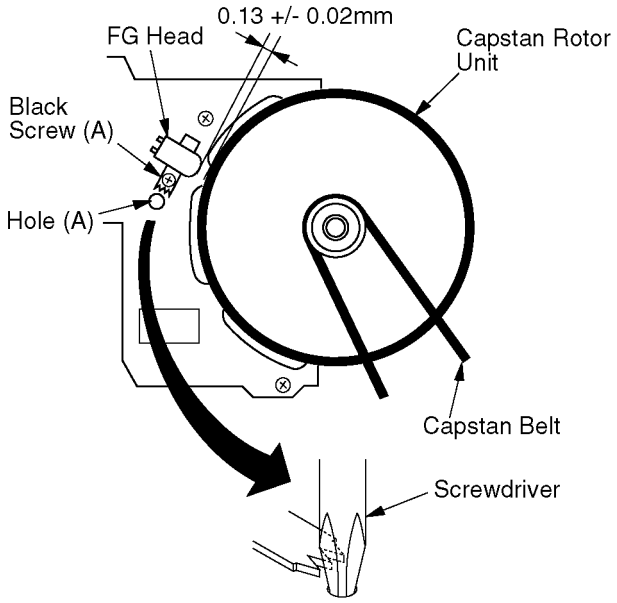


Fig. M4

Note:

Do not touch the outside circumference of the rotor surface with any tool and keep magnetic material away from the rotor magnet (especially metal particles).

Confirmation of Signal Level

1. Supply a Video Signal to the Video Input Jack.
2. Insert a cassette tape and place the unit in SLP recording mode.
3. Connect the oscilloscope to Pin 7 of P2502 on the Capstan Stator Unit.

   Confirm that the signal level is greater than 15mVp-p.

6.2.2.4. P2 AND P3 POST HEIGHT ADJUSTMENT (PRELIMINARY ADJUSTMENT)

Purpose:	To properly align the position of the tape with the Cylinder Lead so that the tape runs with stability.
Symptom of Misadjustment:	Since the Envelope Waveform Signal cannot be tracked properly, the Playback picture will be poor. Since the tape does not run smoothly, the tape will eventually be damaged. Tape interchangeability is poor.
Equipment Required:	Post Adjustment Plate (VFKS0010) Reel Table Height Fixture (VFKS0009) Post Adjustment Driver (VFK0329)

1. Remove the Cassette Up Ass'y.
2. Position the Post Adjustment Plate over the reels.
3. Place the fixture on the Post Adjustment Plate and zero the fixture (DO NOT use the cut-out portion of the post adjustment plate.)

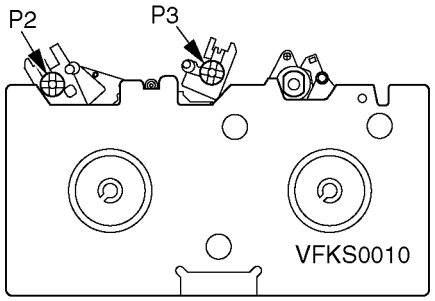


Fig. M5-1

4. Lower each post below the top edge of the Post Adjustment Plate. Then, raise each post until it contacts the foot of the Reel Table Height Fixture. For proper adjustment, the foot of that should be positioned as shown.

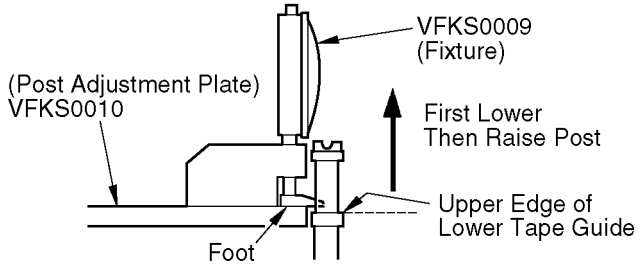


Fig. M5-2

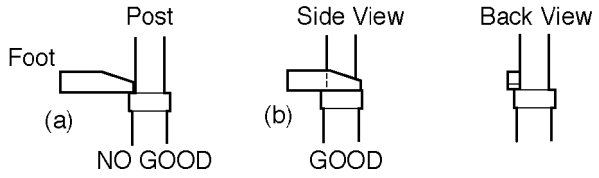


Fig. M5-3

CAUTION:

1. Overtightening P2 and P3 posts may cause the threads to strip.
2. Upon completion of this procedure, perform the "ENVELOPE OUTPUT ADJUSTMENT" procedures.

6.2.2.5. TAPE INTERCHANGEABILITY ADJUSTMENT (FINAL ADJUSTMENT)

Note:

To perform these adjustment/confirmation procedures, set the tracking to the neutral position.

Equipment Required:	Dual Trace Oscilloscope VHS Alignment Tape (VFMS0003H6) Post Adjustment Driver (VFK0329) H-Position Adjustment Driver (VFK0330)

6.2.2.5.1. ENVELOPE OUTPUT ADJUSTMENT

Purpose:	To achieve a satisfactory picture and secure precise tracking.
Symptom of Misadjustment:	If the envelope is output poorly, much noise will appear in the picture. Then the tracking will lose precision and the playback picture will be distorted by any slight variation of the tracking control circuit.
Equipment Required:	Post Adjustment Driver (VFK0329)

1. Connect the oscilloscope to TP3002 on the Video Signal Process Section of the Main C.B.A. Use TP6205 as a trigger.
2. Place a jumper between TP6003 on the Video Signal Process Section and +5V(TP6009) on the System Control Section of the Main C.B.A. to defeat Auto Tracking.
3. Eject the tape and insert it again to access the Neutral Tracking position.
4. Play back the alignment tape and confirm that the RF envelope appears.
5. With Post Adjust Driver, adjust P2 and P3 post height so that the envelope waveform (V1/V-max. is 0.7 or more.) becomes as flat as possible (No envelope drop). If the envelope drop appears on the left-half of the waveform, adjust P2 post height. If the envelope drop appears on the right-half of the waveform, adjust P3 post height.

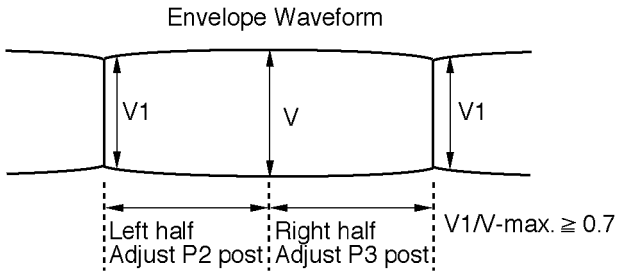


Fig. M6-1

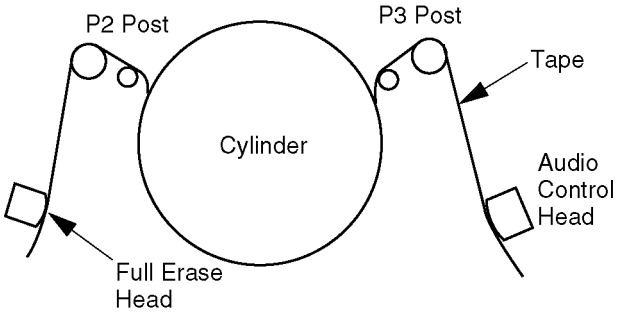


Fig. M6-2

Note:

To confirm adjustment, press the Tracking Control Up or Down button on remote control. Make sure that the envelope waveform remains flat. If not, readjust P2 and/or P3 post heights.

6. After adjustment, confirm that the tape travels without curling at P2 and P3 posts.
7. Remove the jumper after completing the adjustment procedure.

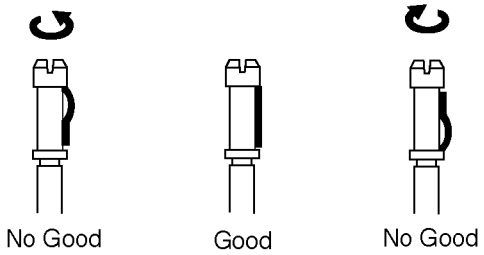


Fig. M6-3

Note:

Overtightening P2 and P3 posts may cause the threads to strip.

6.2.2.5.2. AUDIO CONTROL HEAD TILT ADJUSTMENT

Purpose: To confirm that the tape runs smoothly. In particular, confirm that the tape properly picks up the Audio Signal at the upper part of the head and the Control Signal at the lower part of the head.

Symptom of Misadjustment: If the tilt of the Audio Control Head is poorly adjusted, the tape will eventually be damaged. An intermittent Blue screen may be seen in Playback.

1. Play back a T120 cassette tape and check that the tape travels smoothly between the upper and lower guides of the P4 post.
2. If necessary, adjust Black Screw (B) clockwise until the tape begins to curl at the lower edge of the P4 post. Then adjust the screw counterclockwise until the curling is eliminated.

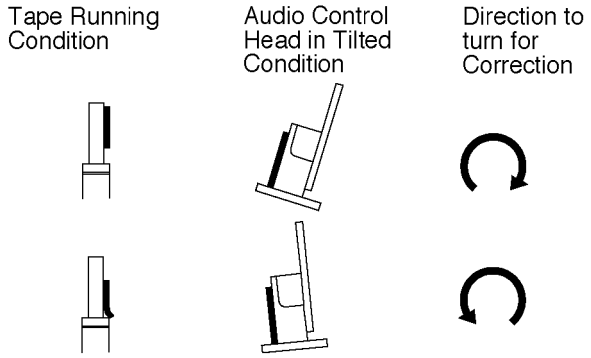


Fig. M7

6.2.2.5.3. AUDIO CONTROL HEAD HEIGHT ADJUSTMENT

The height of the Audio Control Head replacement part is preset at the factory.

Purpose: To be sure the tape runs properly along the Control Head.

Symptom of Misadjustment: If the control signal is not properly picked up, Servo Operation cannot be achieved. A Blue screen will be seen in Playback.

This confirmation is required when the Audio Control Head is replaced.

1. Play back a T120 cassette tape and check that the lower edge of the tape runs approximately 0.25 mm above the lower edge of the Audio Control Head.
2. If necessary, adjust Black Screws (A) and (B) clockwise to lower the tape or counterclockwise to raise.

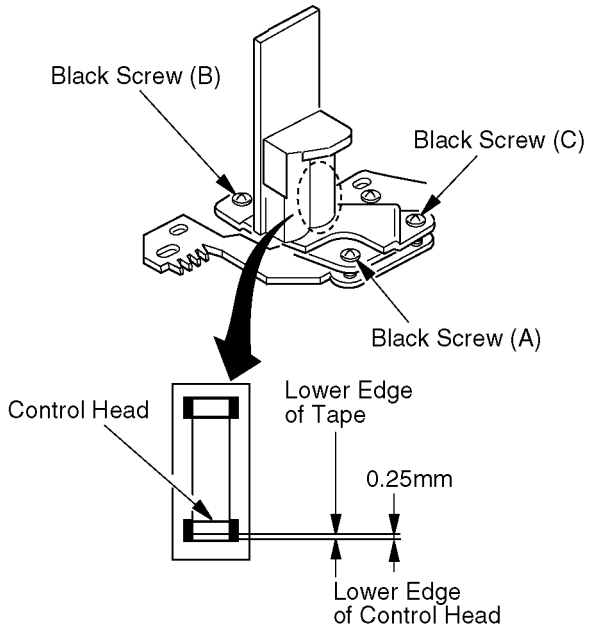


Fig. M8

6.2.2.5.4. AUDIO CONTROL HEAD AZIMUTH ADJUSTMENT

Purpose: To adjust the position and height of the Audio Control Head so that it meets the tape tracks properly.

Symptom of Misadjustment: If the position of the Audio Control Head is not properly adjusted, the Audio S/N Ratio is poor.

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Play back the 6kHz Monaural Audio portion of the alignment tape.
3. Adjust Black Screw (C) on the Audio Control Head base so that the output level is at maximum.

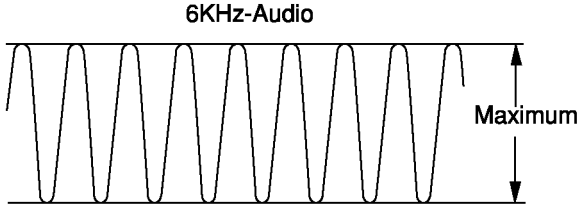


Fig. M9

4. Confirm the height of the Audio Control Head is proper. If not, readjust Black Screws (A) and (B).

6.2.2.5.5. AUDIO CONTROL HEAD HORIZONTAL POSITION ADJUSTMENT

Purpose: To adjust the Horizontal Position of the Audio Control Head.

Symptom of Misadjustment: If the Horizontal Position of the Audio Control Head is not properly adjusted, a maximum envelope cannot be obtained at the Neutral Position of the Tracking Control Circuit.

1. Connect the oscilloscope to TP3002 on the Video Signal Process Section of the Main C.B.A. Use TP6205 as a trigger.
2. Place a jumper between TP6003 on the Video Signal Process Section and +5V(TP6009) on the System Control Section of the Main C.B.A. to defeat Auto Tracking.
3. Eject the tape and insert it again to access the Neutral Tracking position.
4. Play back the alignment tape and confirm that the RF envelope appears.
5. If adjustment is required, loosen the Black Screw (D) and tighten it lightly. Set the H-Position Adjustment Driver into the Hole (A). Then slowly turn the fixture either clockwise or counterclockwise so that the envelope is at maximum.
6. Before finding the center of the maximum period of the envelope, rotate the fixture back and forth slightly to confirm the limits on either side of the maximum period.
7. Push the Tracking Control Up Button (on the Remote Control) several times (count the number of times pushed) until the maximum envelope is reduced to 1/2.
8. Reset the tracking to the neutral position by ejecting the tape and reinserting it. Push the Tracking Control Down Button (on the Remote Control) several times (count the number of times pushed) until the maximum envelope is reduced to 1/2.
9. If the number of pushing is not the same, then loosen the Black Screw (D) and set the H-Position Adjustment Driver into the Hole (A) to find the center point. Then repeat the above procedure to determine the center point.
10. Tighten Black Screw (D).

    (The Black Screw (D) should be in the approximate center of the hole.)
11. Remove the jumper between TP6003 and +5V(TP6009).

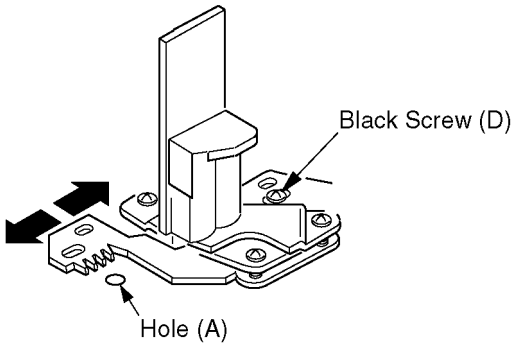


Fig. M10

Note:

Old type of H-Position Adjustment Driver (VFK0136) can be used for this adjustment.

6.3. ELECTRICAL ADJUSTMENT

6.3.1. TEST EQUIPMENT

To do all of these electrical adjustments, the following equipment is required.

1. Dual-Trace Oscilloscope
   Voltage Range: 0.001 to 50V/Div.
   Frequency Range: DC to 50MHz
   Probes: 10:1, 1:1
2. NTSC Video Pattern Generator
3. Color TV Receiver or Monitor
4. Plastic Tip Driver and Non-Metal Driver
5. Isolation Transformer (Variable)
6. VHS Alignment Tape (VFMS0003H6)

6.3.2. HOW TO READ THE ADJUSTMENT PROCEDURES

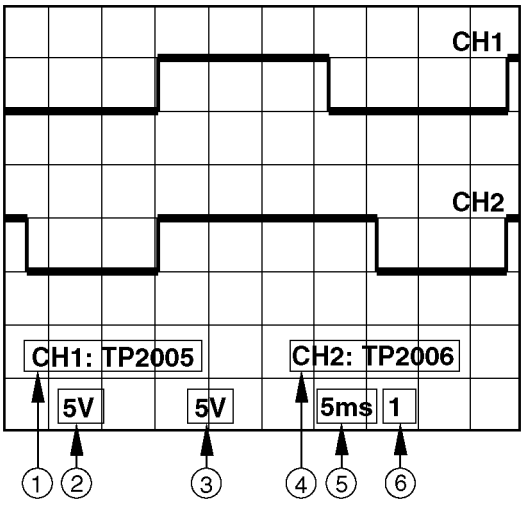


Fig. E1

6.3.3. PG SHIFTER ADJUSTMENT

Purpose:	Determine the Video Head Switching Point during Playback.
Symptom of Misadjustment:	May cause Head Switching Noise and/or Vertical Jitter.
Test Point:	TP3001 (Main C.B.A.)
	TP6205 (Main C.B.A.)
Adjustment:	R6201 (Main C.B.A.)
Specification:	T = 6 +/- 1H (0.38 +/- 0.06msec.)
Mode:	SP Playback
Equipment:	Oscilloscope,
	VHS Alignment Tape (VFMS0003H6)

1. Connect the channel-1 scope probe to TP3001 and the channel-2 scope probe to TP6205. Trigger from channel-2.
2. Playback the VHS alignment tape, and then connect TP6003 to GND to be in PG Shifter Adjustment mode.
3. Adjust the R6201 (PG SHIFTER) so that the trailing edge of the head switching pulse is placed 6H +/- 1H (0.38 +/- 0.06msec.) before the start of the vertical sync pulse.
4. Disconnect TP6003 and GND to set the adjustment value of PG Shifter.

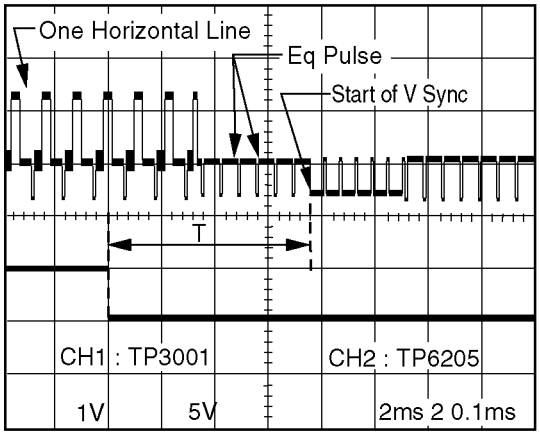
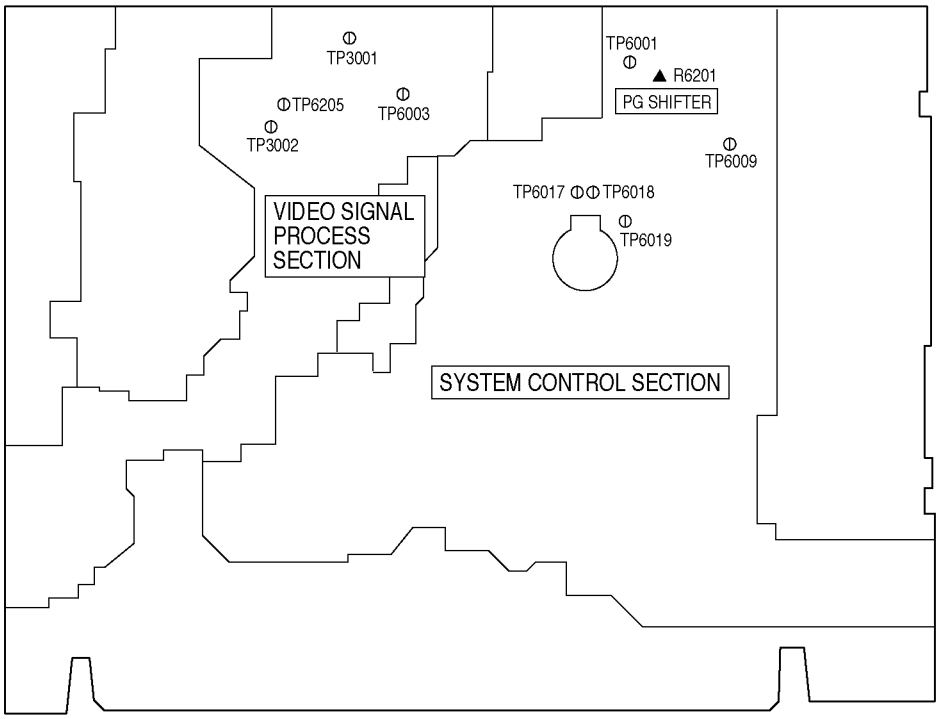


Fig. E2

6.4. TEST POINTS AND CONTROL LOCATION

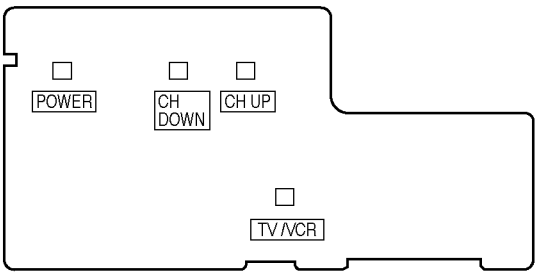
Main C.B.A.



(Component Side)

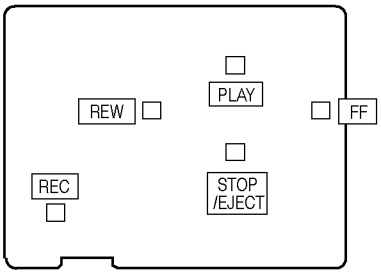
FUNCTION OF IMPORTANT TEST POINTS		
TP3001	Video Signal to Jack	
TP3002	REC/PB Video envelope signal	
TP6001	Service Test Point (inhibit sensors)	
TP6003	defeat Auto tracking function (connect to +5V(TP6009))	
	PG Shifter Adjustment Mode (connect to GND)	
TP6009	+5V	
TP6205	Head SW.	
TP6017 TP6018 TP6019	Mode Select SW. Position	Mode Position (A) Mode Position (B) Mode Position (C)

Operation I C.B.A.



(Component Side)

Operation II C.B.A.



(Component Side)

Test Point Information

① Test Point with a jumper wire across a hole in the P.C.B.

7 SCHEMATIC DIAGRAMS

7.1. SCHEMATIC DIAGRAMS AND CIRCUIT BOARD LAYOUT NOTES

1. **Important safety notice**
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components. Use only the specified parts.

2. Do not use the part number shown on this drawing for ordering.
The correct part number is shown in the parts list, and may be slightly different or amended since this drawing was prepared.

3. Use only original replacement parts:
   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Parts different in shape or size may be used.
   However, only interchangeable parts will be supplied as service replacement parts.

5. Test point information
   ⓘ :Test point with a jumper wire across a hole in P.C.B.
   □→ :Test point with a component lead on the foil side.
   ▨ :Test point with no test pin.
   ● :Test point with a test pin.

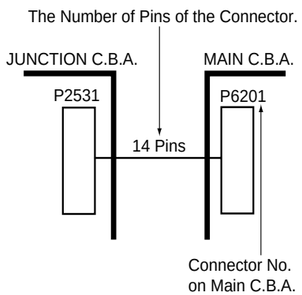
Schematic Diagram Notes

1. Indication for Zener Voltage of Zener Diodes
   The Zener Voltage of Zener Diodes are indicated as such on Schematic Diagrams.

   Example:
   (6.2V).....Zener Voltage

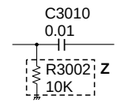
2. How to identify Connectors
   Each connector is labeled with a Connector No. and Pin No. Indicating what it is connected to, in other words, its counter part.
   Use the interconnection schematic diagram to find the connection between associated connectors.

   Example:
   The connections between C.B.A.s are shown below.



3. Parts enclosed in dashed lines marked "Z" are not used in any models included in this service manual.

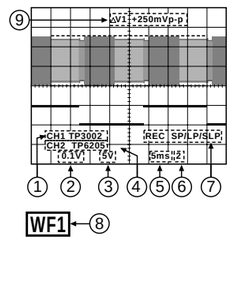
Example:



4. The part number shown on this drawing is only main part number,
   except for safety parts. Be sure to make your orders of replacement parts according to the parts list.

Signal Waveform Note

How to read Signal Waveform



① Connecting Point
② Volts/Div
③ Volts/Div
④ Connecting Point
⑤ Time/Div
⑥ Trigger Channel of the scope (1:CH1,2:CH2)
⑦ Operation Mode of VCR
⑧ Waveform Point on Schematic
⑨ ΔV1:Peak to Peak

Voltage Chart Note

Voltage Measurement
a. Color bar signal in SP mode.
b. ---:Unmeasurable or not necessary to measure.

Circuit Board Layout Note

Circuit Board Layout shows components installed for various models.
For proper parts content for the model you are servicing,
please refer to the schematic diagram and parts list.

NOTE:
Circuit Board Layout includes components which are not used.

Comparison chart of models & marks

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z

Note : Refer to item 3 of Schematic Diagram Notes for mark "Z".

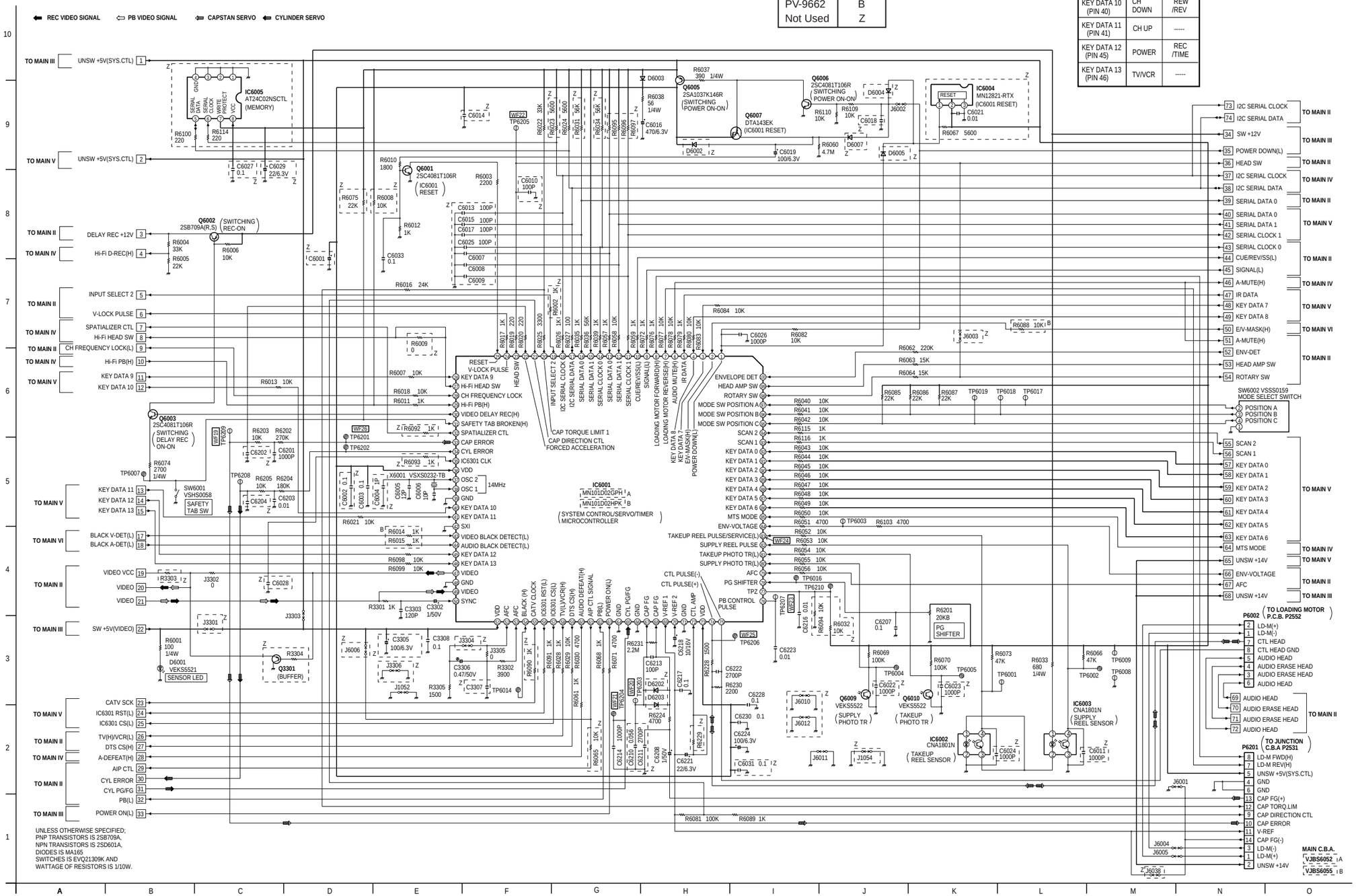
7.2. MAIN I (SYSTEM CONTROL / SERVO) SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z

KEY DATA IN	SCAN	
	SCAN 1 (PIN 93)	SCAN 2 (PIN 94)
KEY DATA 8 (PIN 4)	-----	STOP /EJECT
KEY DATA 9 (PIN 26)	-----	FF /CUE
KEY DATA 10 (PIN 40)	CH DOWN	REW /REV
KEY DATA 11 (PIN 41)	CH UP	-----
KEY DATA 12 (PIN 45)	POWER	REC /TIME
KEY DATA 13 (PIN 46)	TV/VCR	-----

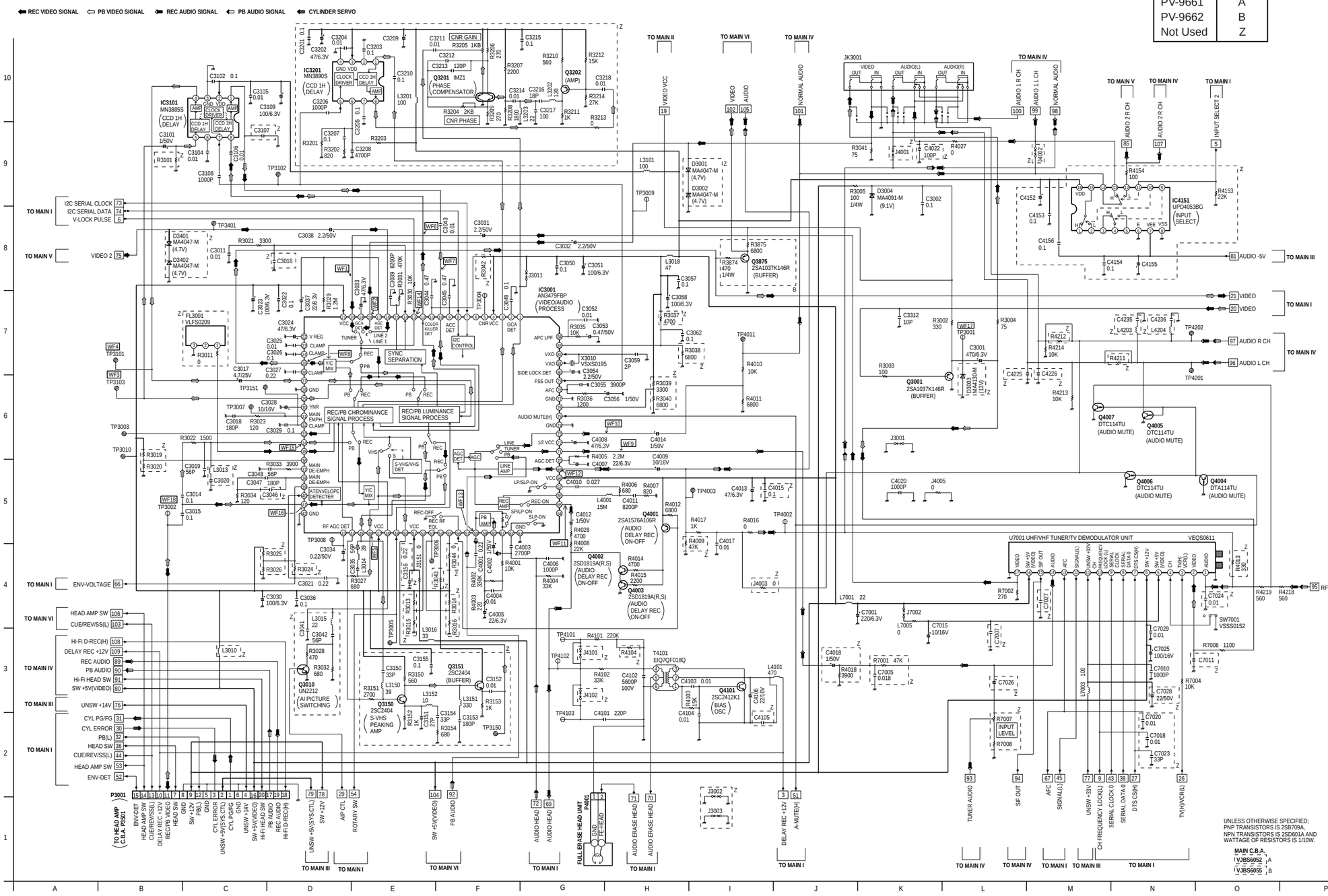

REC VIDEO SIGNAL
PB VIDEO SIGNAL
CAPSTAN SERVO
CYLINDER SERVO
IC6005 AT24C02NSCTL (MEMORY)
Q6003 2SC4081T106R SWITCHING DELAY REC ON-ON
Q6002 2SB709A(R,S) SWITCHING REC-ON
Q6001 2SC4081T106R IC6001 RESET
Q6005 2SA1037K146R SWITCHING POWER ON-ON
Q6006 2SC4081T106R SWITCHING POWER ON-ON
Q6007 DTA143EK (IC6001 RESET)
IC6004 MN12821-RTX (IC6001 RESET)
IC6001 MN101D02GPH A / MN101D02HPK B (SYSTEM CONTROL/SERVO/TIMER MICROCONTROLLER)
IC6002 CNA1801N (TAKEUP REEL SENSOR)
IC6003 CNA1801N (SUPPLY REEL SENSOR)
Q6009 VEKS5522 (SUPPLY PHOTO TR)
Q6010 VEKS5522 (TAKEUP PHOTO TR)
Q3301 (BUFFER)
D6001 VEK55521 SENSOR LED
SW6001 VSHS0058 SAFETY TAB SW
SW6002 VSSS0159 MODE SELECT SWITCH
X6001 VSXS0232-TB 14MHz
TO MAIN III
TO MAIN V
TO MAIN II
TO MAIN IV
TO MAIN VI
TO LOADING MOTOR P.C.B. P2552
TO JUNCTION C.B.A P2531
MAIN C.B.A. VJBS6052 A VJBS6055 B
UNLESS OTHERWISE SPECIFIED;
PNP TRANSISTORS IS 2SB709A,
NPN TRANSISTORS IS 2SD601A,
DIODES IS MA165.
SWITCHES IS EVQ21309K AND
WATTAGE OF RESISTORS IS 1/10W.

7.3. MAIN II (SIGNAL PROCESS / AUDIO) SCHEMATIC DIAGRAM

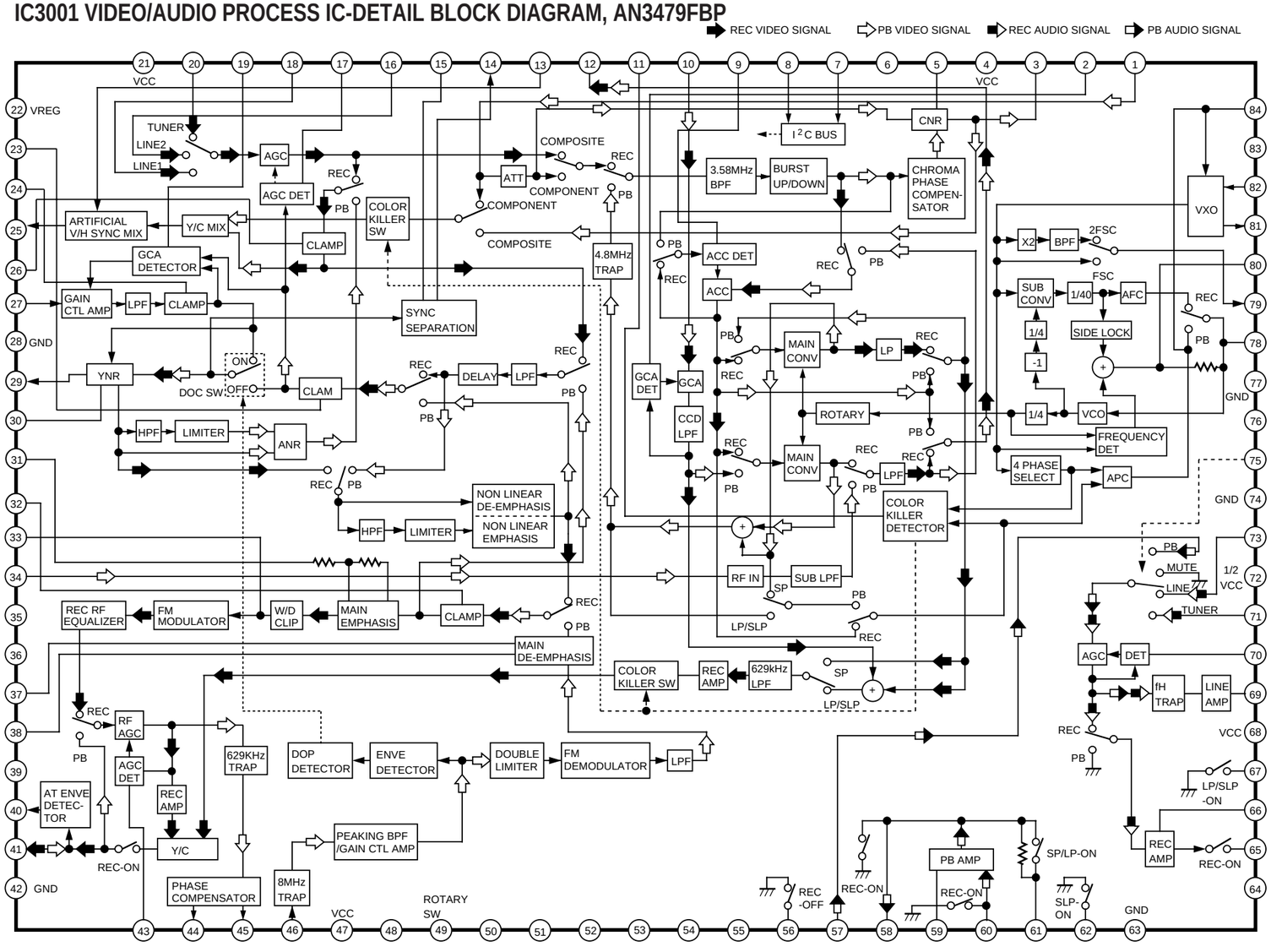
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z



IC3001 VIDEO/AUDIO PROCESS IC-DETAIL BLOCK DIAGRAM, AN3479FBP



7.4. MAIN III (POWER SUPPLY) SCHEMATIC DIAGRAM

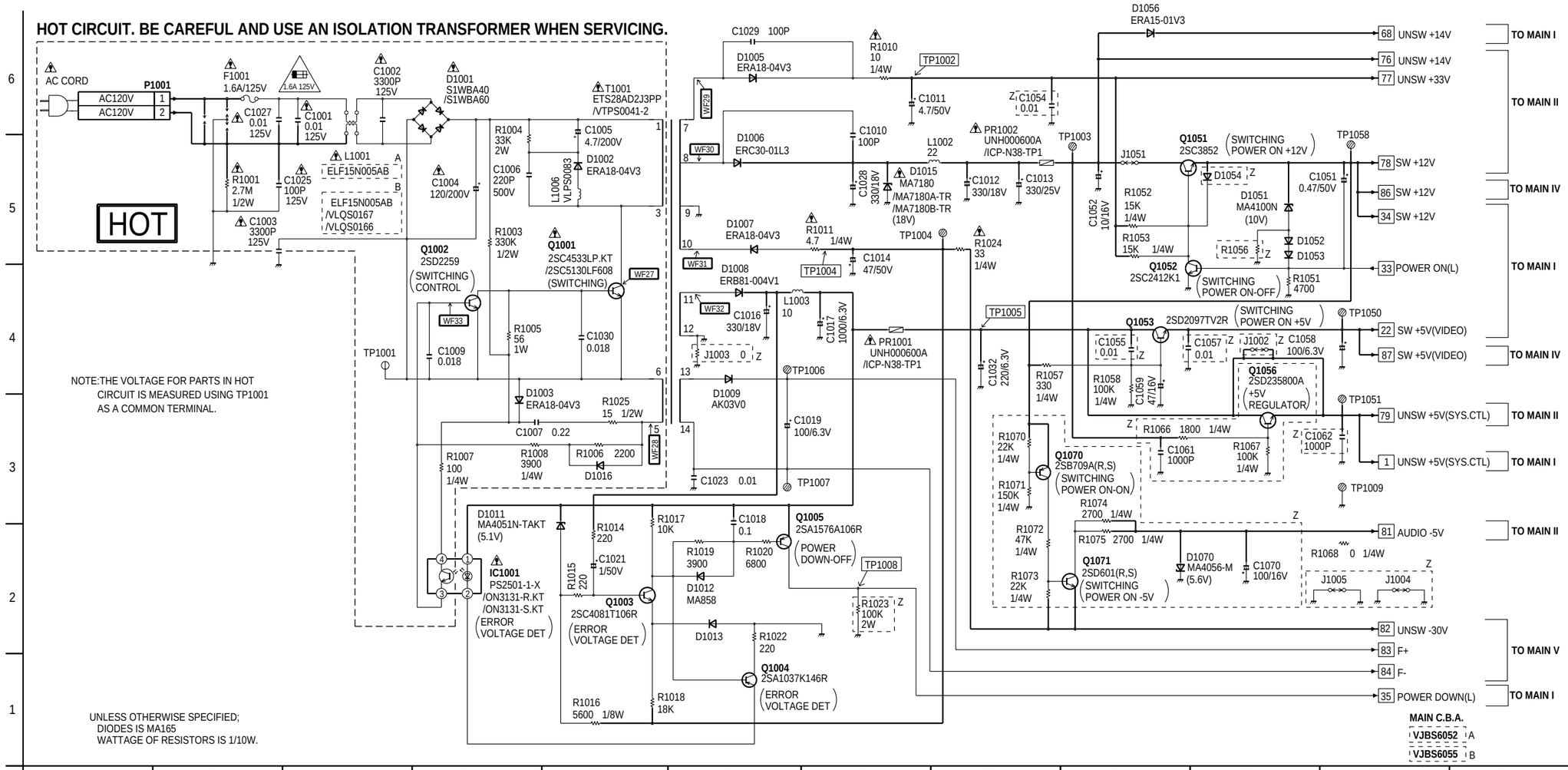
CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLASE ONLY WITH THE SAME TYPE 1.6A 125V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D'T INCENDIE N'I UTILISERQUE DES FUSIBLE DE MÉME
TYPE 1.6A 125V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z

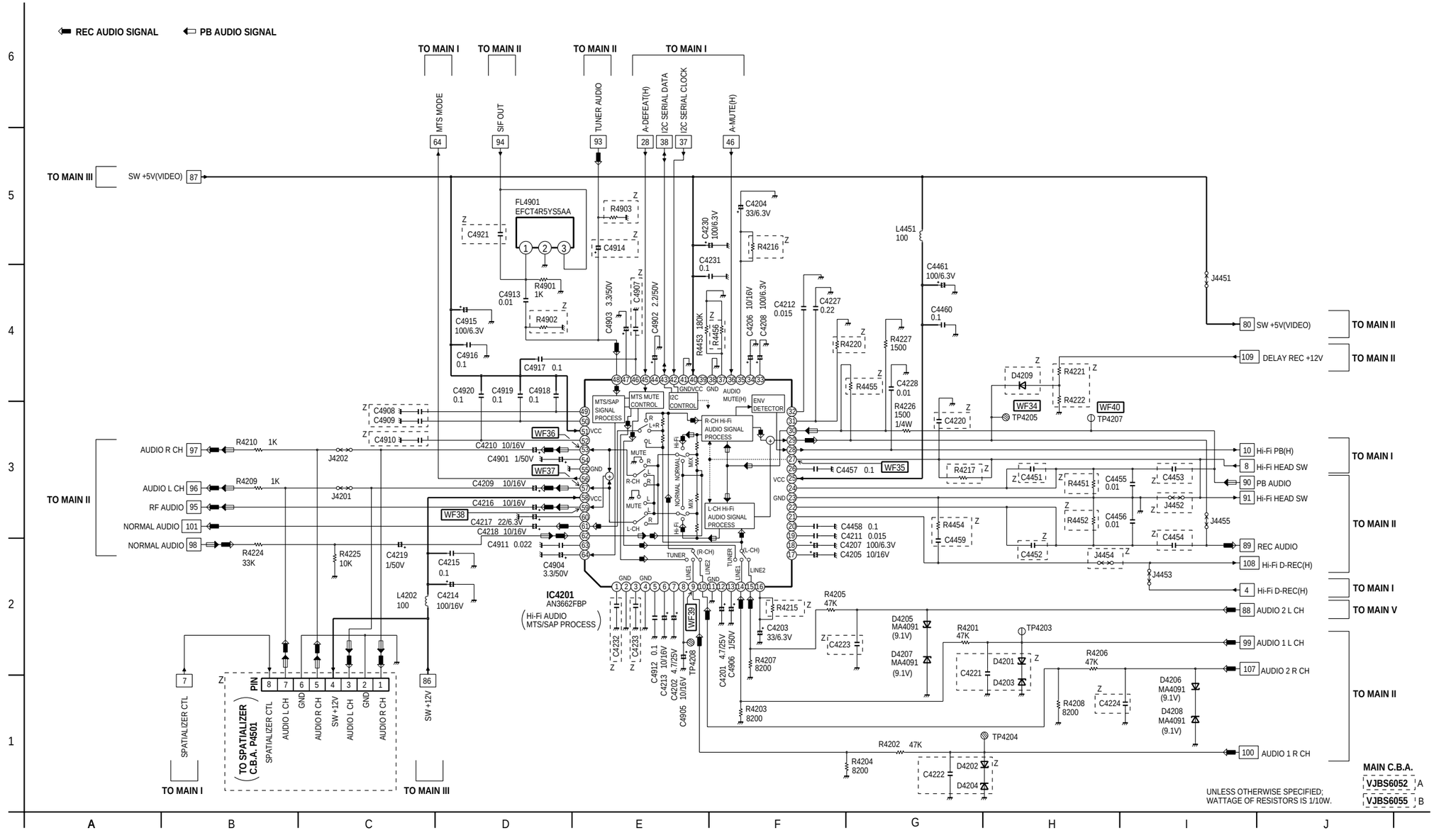


7.5. MAIN IV (Hi-Fi) SCHEMATIC DIAGRAM

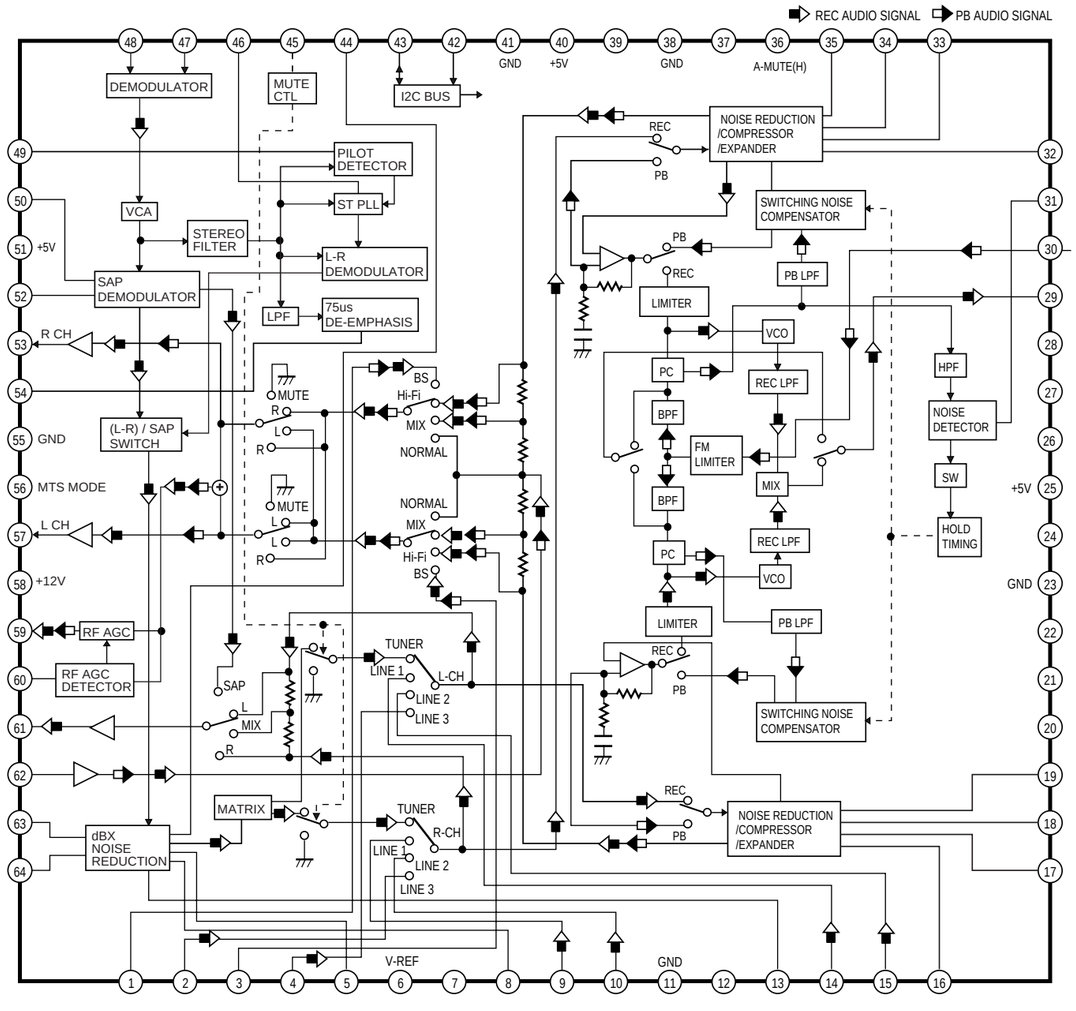
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z



IC4201 Hi-Fi AUDIO MTS/SAP PROCESS IC-DETAIL BLOCK DIAGRAM, AN3662FBP

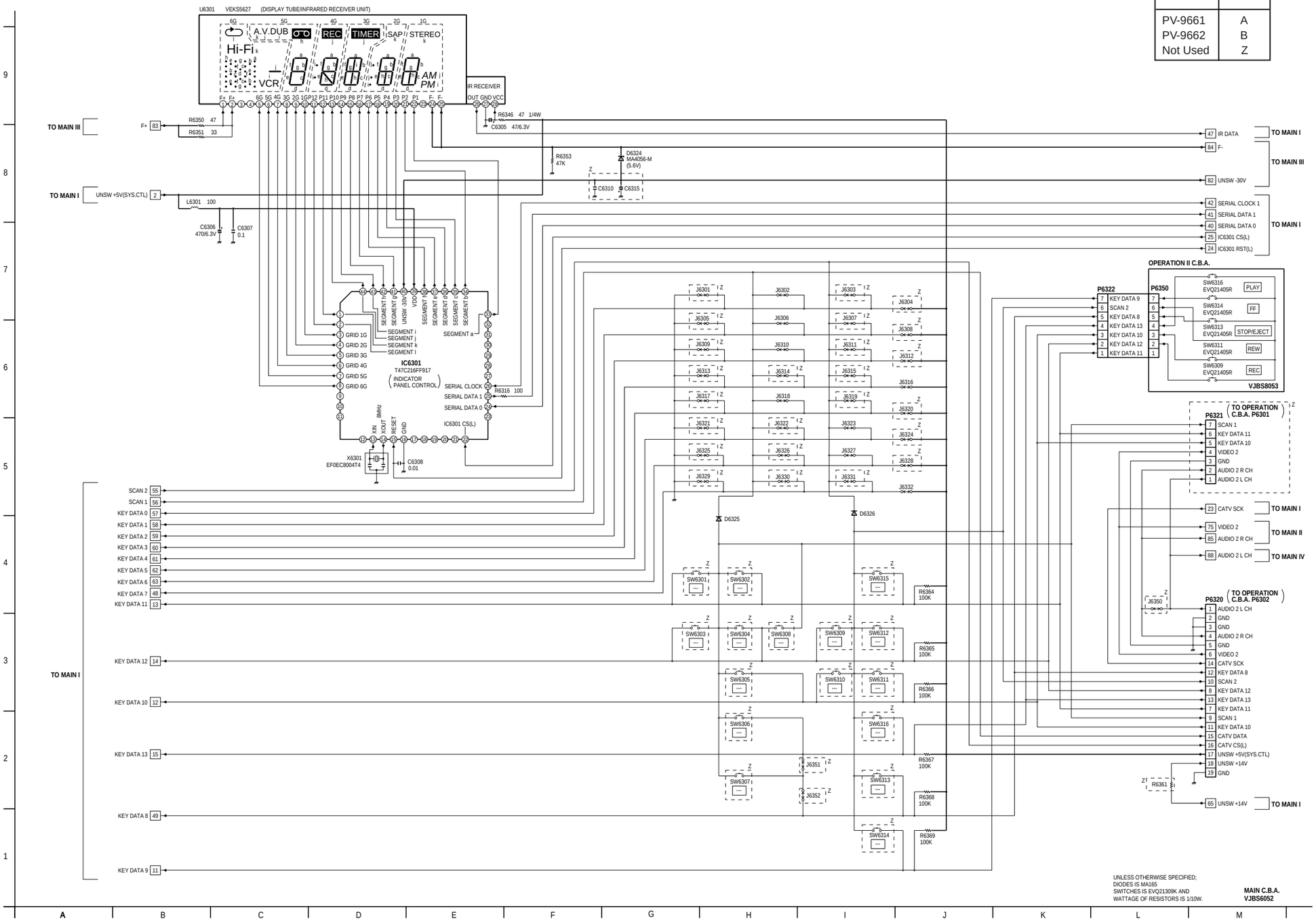


7.6. MAIN V (OPERATION) / OPERATION II SCHEMATIC DIAGRAM (A)

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z

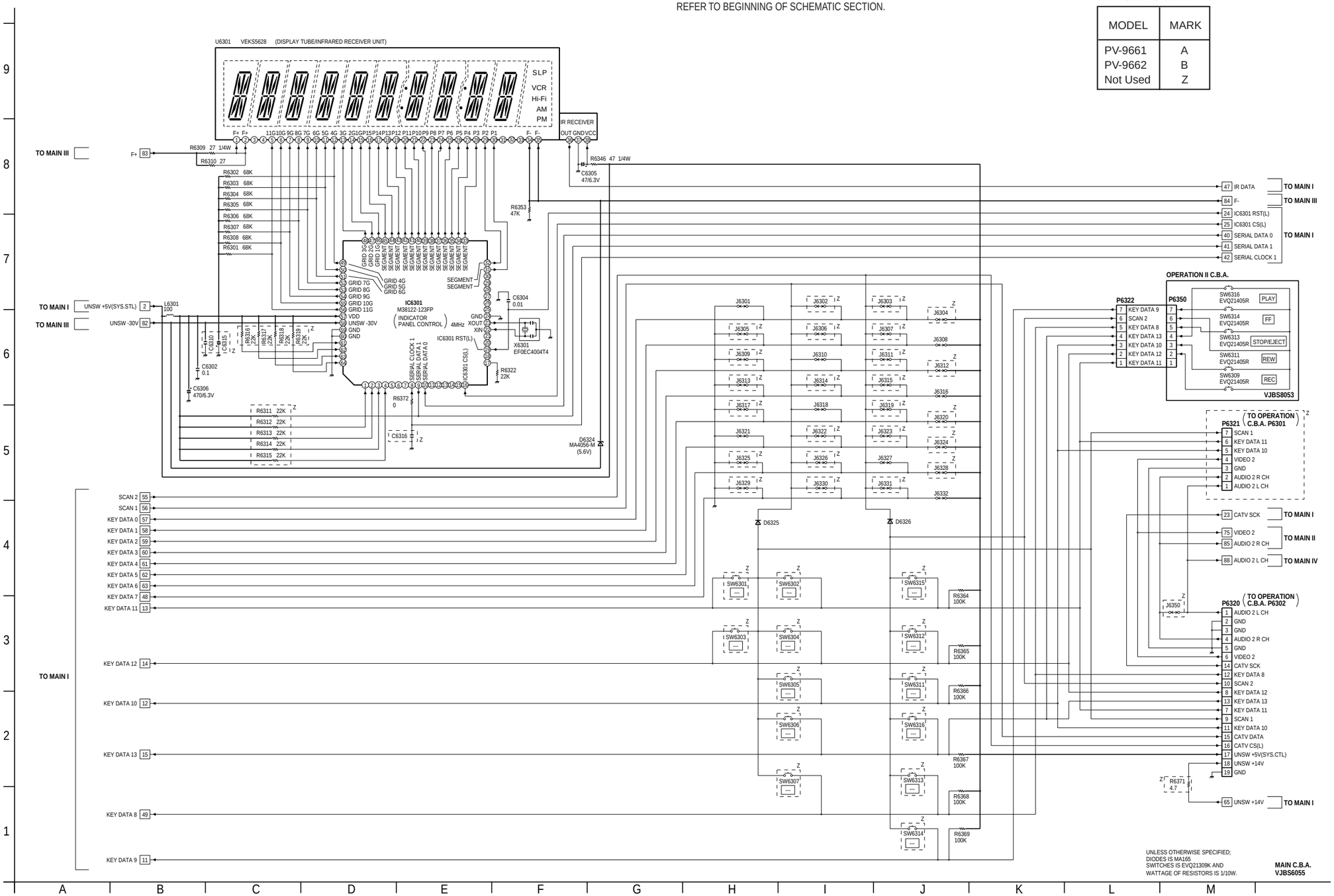


7.7. MAIN V (OPERATION) / OPERATION II SCHEMATIC DIAGRAM (B)

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z

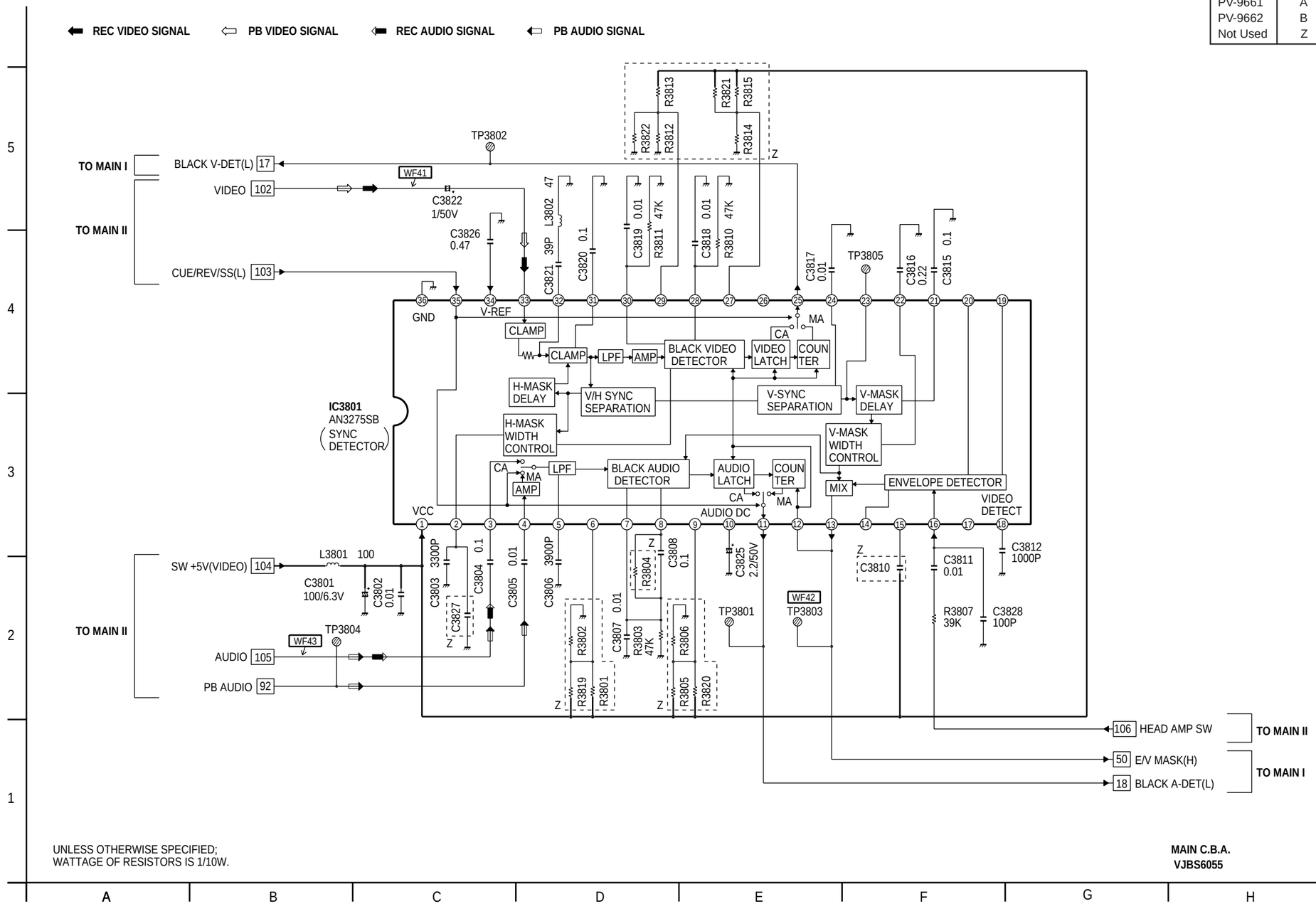


7.8. MAIN VI (ADVANCE) SCHEMATIC DIAGRAM (B)

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z



UNLESS OTHERWISE SPECIFIED;
WATTAGE OF RESISTORS IS 1/10W.

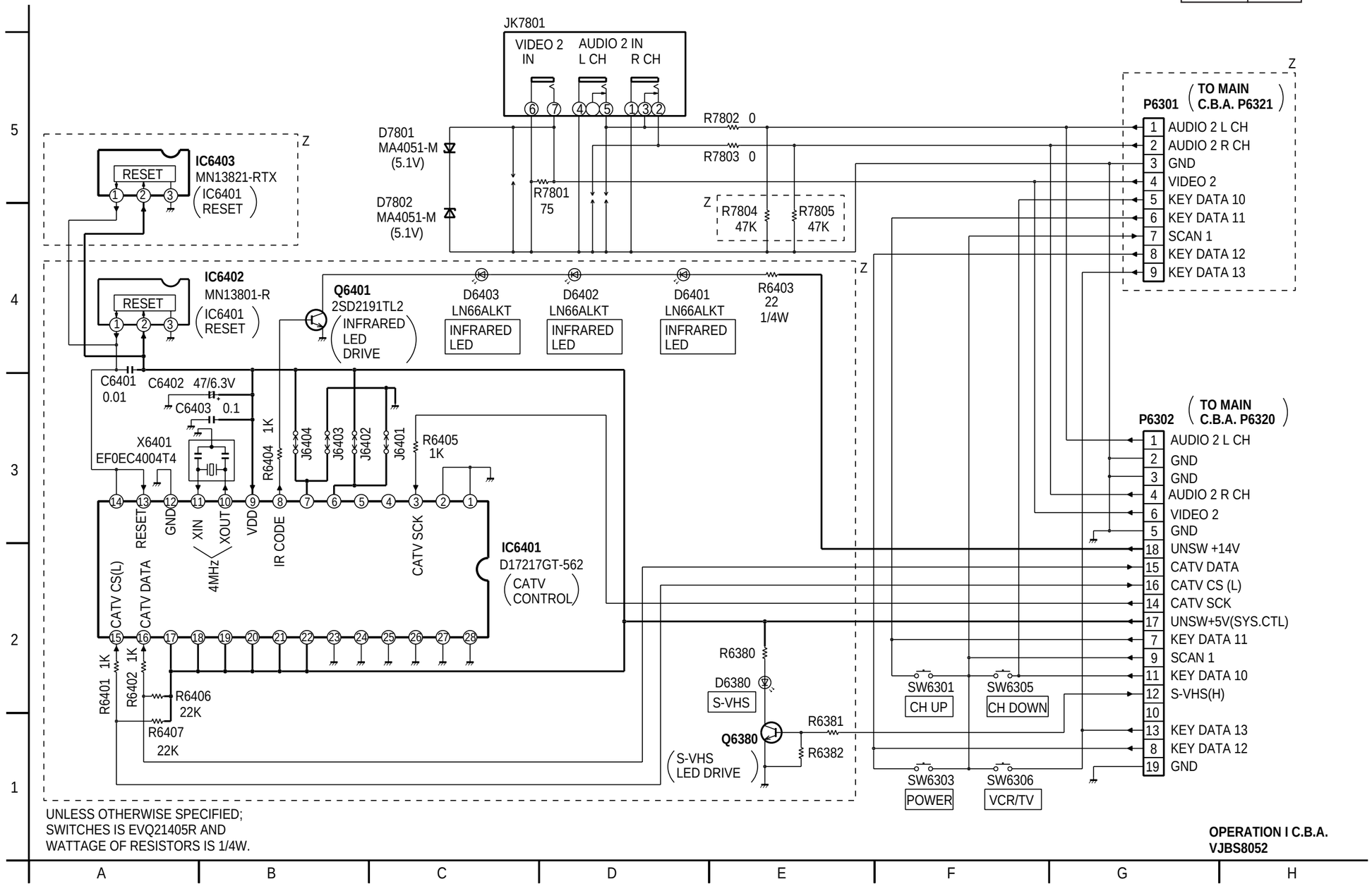
MAIN C.B.A.
VJBS6055

7.9. OPERATION I SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z



UNLESS OTHERWISE SPECIFIED;
SWITCHES IS EVQ21405R AND
WATTAGE OF RESISTORS IS 1/4W.

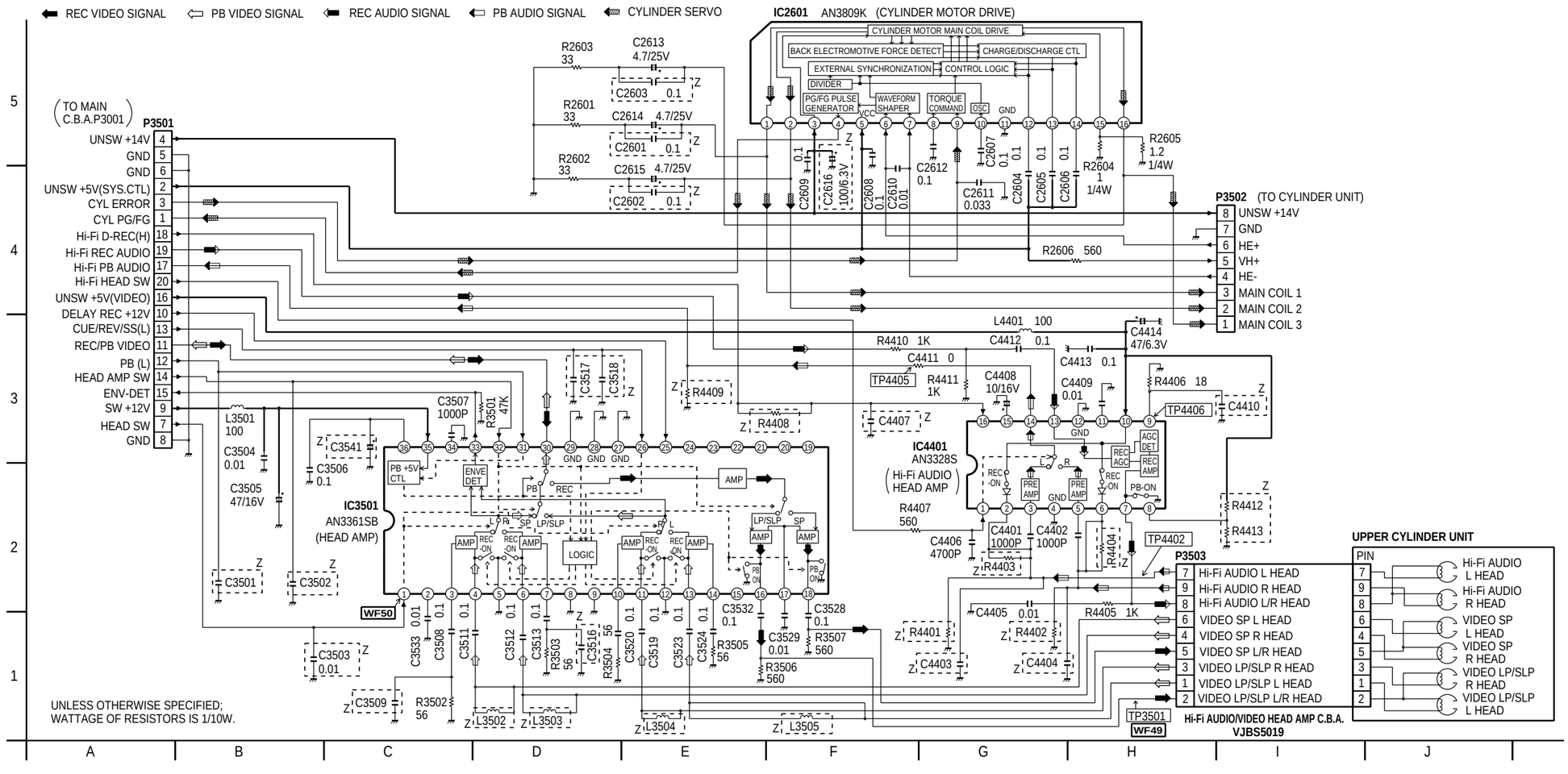
OPERATION I C.B.A.
VJBS8052

7.10. Hi-Fi AUDIO / VIDEO HEAD AMP SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART OF MODELS & MARKS

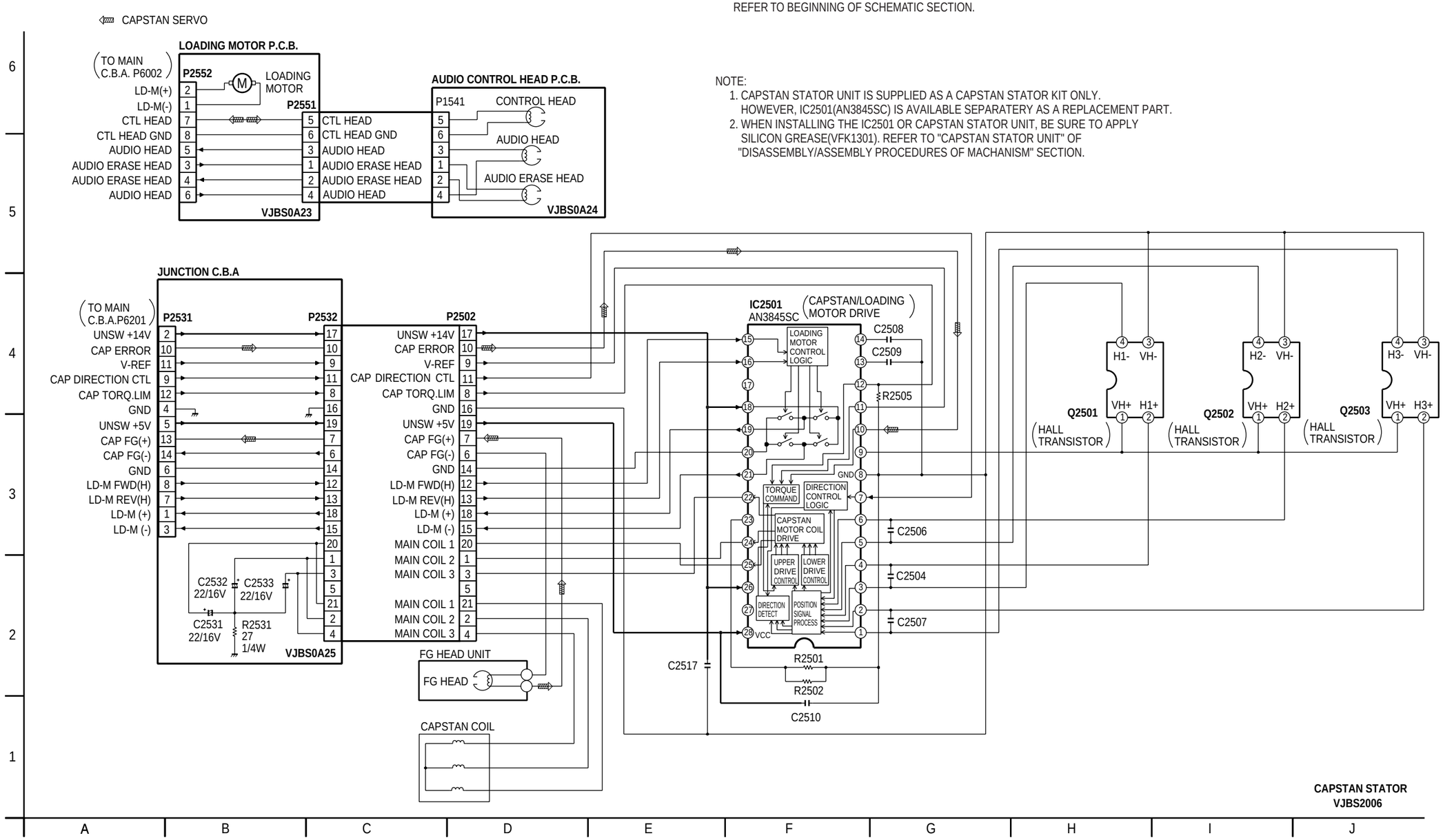
MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z



7.11. CAPSTAN STATOR / JUNCTION / LOADING MOTOR / AUDIO CONTROL HEAD SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

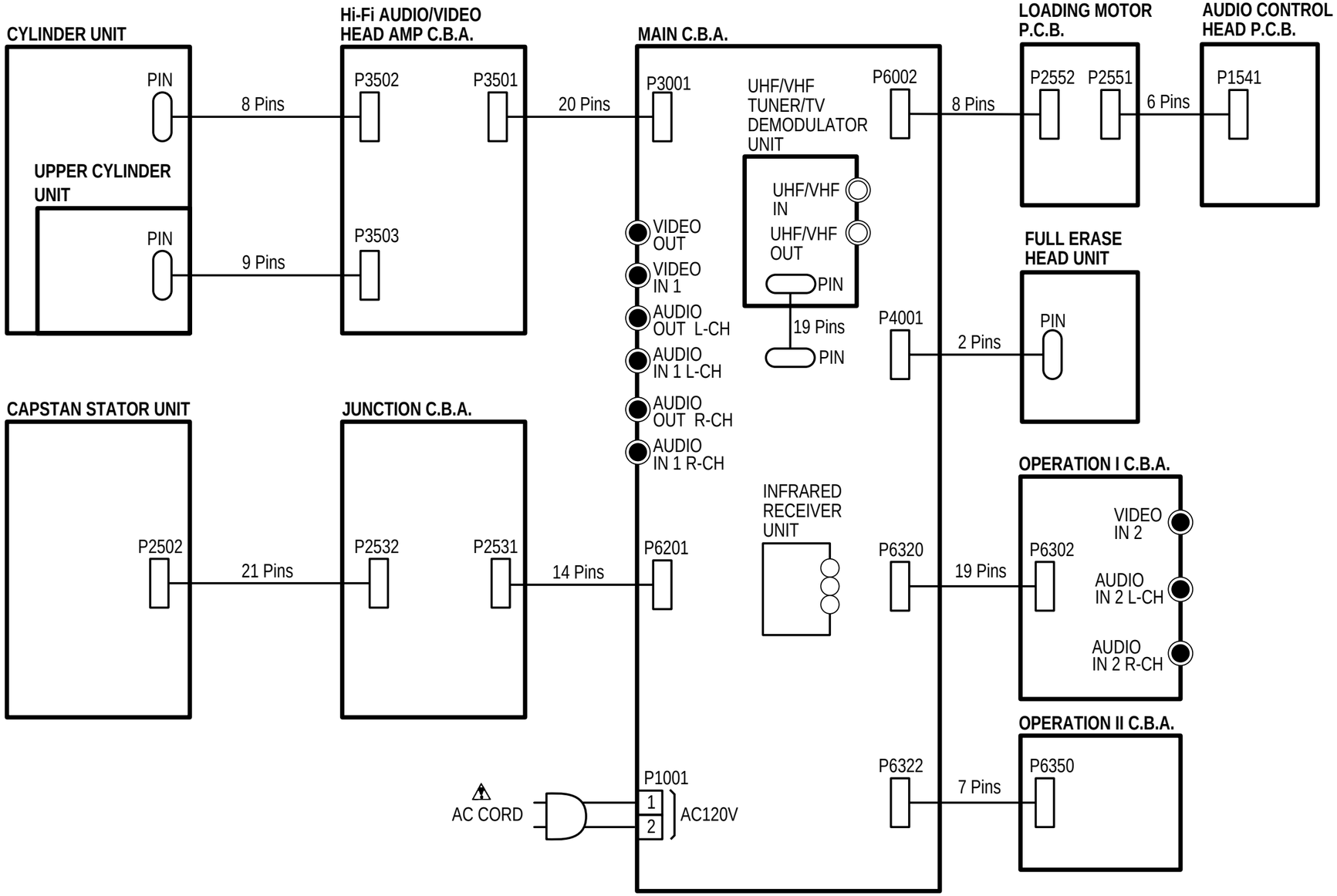
NOTE:
1. CAPSTAN STATOR UNIT IS SUPPLIED AS A CAPSTAN STATOR KIT ONLY.
   HOWEVER, IC2501(AN3845SC) IS AVAILABLE SEPARATERY AS A REPLACEMENT PART.
2. WHEN INSTALLING THE IC2501 OR CAPSTAN STATOR UNIT, BE SURE TO APPLY
   SILICON GREASE(VFK1301). REFER TO "CAPSTAN STATOR UNIT" OF
   "DISASSEMBLY/ASSEMBLY PROCEDURES OF MACHANISM" SECTION.



7.12. INTERCONNECTION SCHEMATIC DIAGRAM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

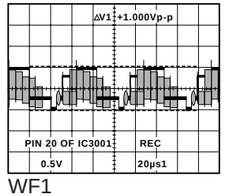
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.



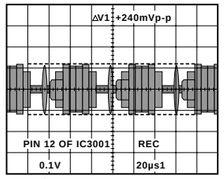
7.13. SIGNAL WAVEFORM

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

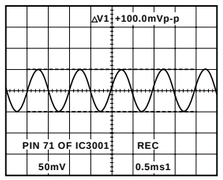
MAIN C.B.A.



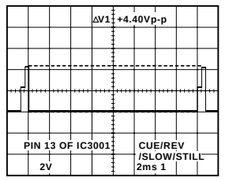
WF1



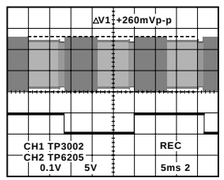
WF6



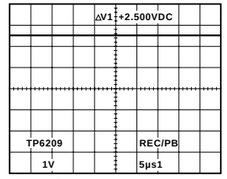
WF9



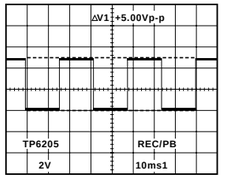
WF14



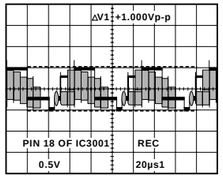
CH1 WF18
CH2 WF22



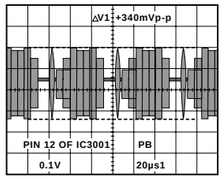
WF19



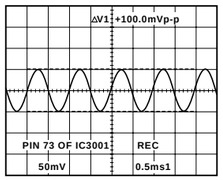
WF22



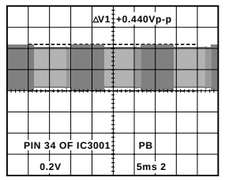
WF2



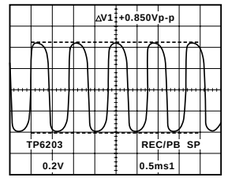
WF6



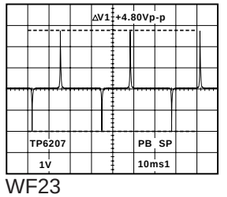
WF10



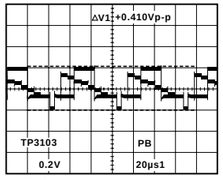
WF15



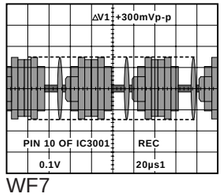
WF20



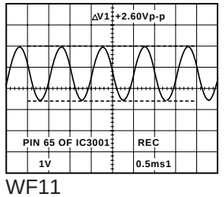
WF23



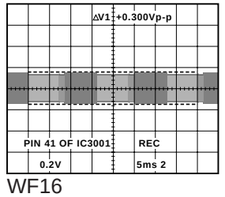
WF3



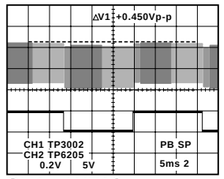
WF7



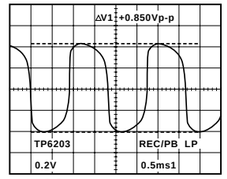
WF11



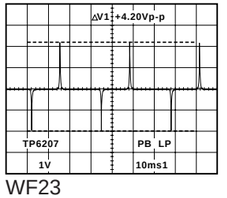
WF16



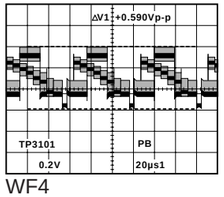
CH1 WF18
CH2 WF22



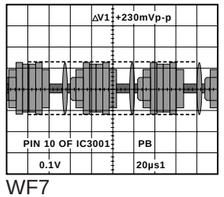
WF20



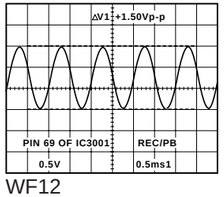
WF23



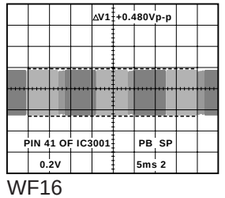
WF4



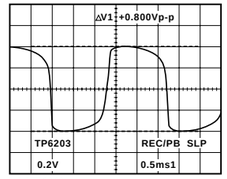
WF7



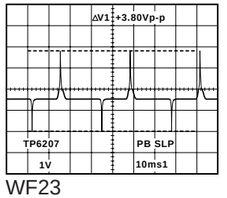
WF12



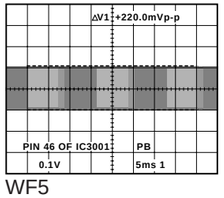
WF16



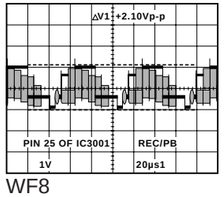
WF20



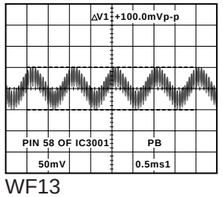
WF23



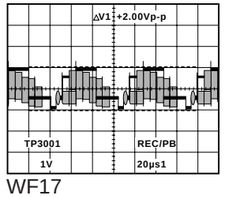
WF5



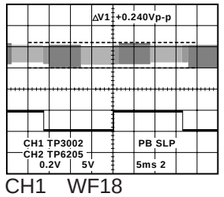
WF8



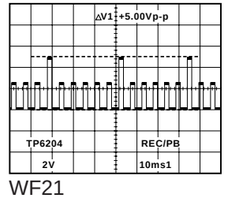
WF13



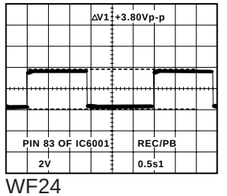
WF17



CH1 WF18
CH2 WF22



WF21



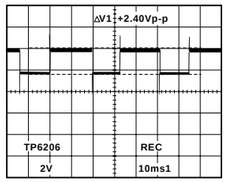
WF24

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

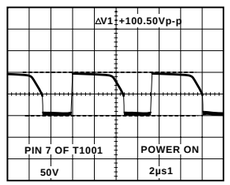
Hi-Fi AUDIO / VIDEO HEAD AMP C.B.A.

COMPARISON CHART OF MODELS & MARKS

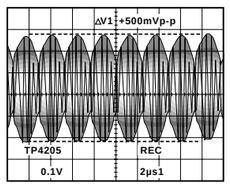
MODEL	MARK
PV-9661	A
PV-9662	B



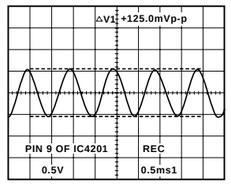
WF25



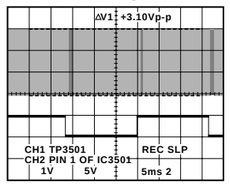
WF29



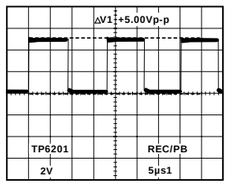
WF34



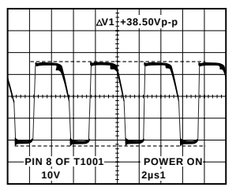
WF39



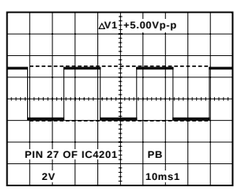
CH1 WF49
CH2 WF50



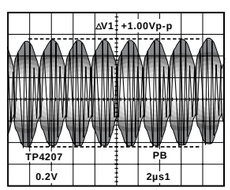
WF26



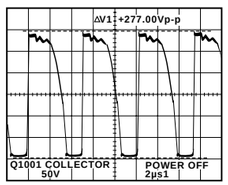
WF30



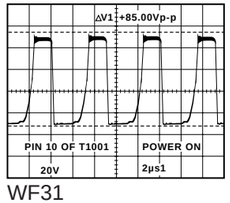
WF35



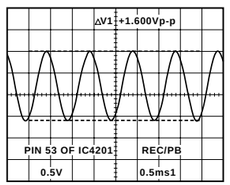
WF40



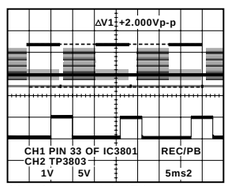
WF27



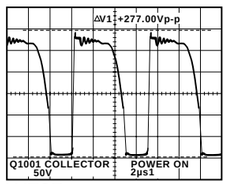
WF31



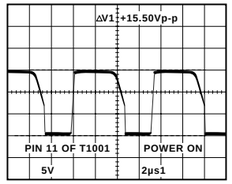
WF36



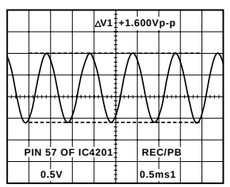
CH1 WF41(B)
CH2 WF42(B)



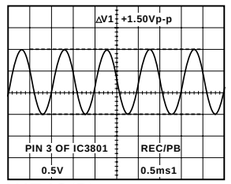
WF27



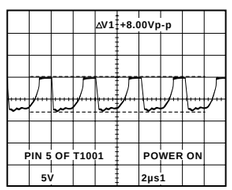
WF32



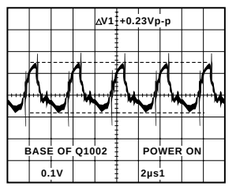
WF37



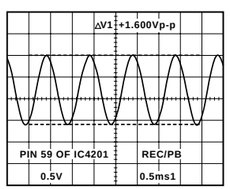
WF43(B)



WF28



WF33



WF38

7.14. VOLTAGE CHART

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B

MAIN CIRCUIT

MODE / PIN NO.	REC	PLAY
IC1001		
1	5.1	5.1
2	4.4	4.4
3	-54.0	-54.0
4	-54.0	-54.0
IC3001		
1	5.1	5.1
2	3.4	3.4
3	---	---
4	5.1	5.1
5	4.3	4.3
6	---	---
7	5.2	5.2
8	5.2	5.2
9	2.2	2.2
10	2.8	2.8
11	0.8	0.8
12	2.8	2.8
13	0.4	0.4
14	0.5	0.5
15	0	0.9
16	---	---
17	2.4	1.8
18	3.1	5.7
19	2.6	2.6
20	3.1	4.0
21	5.1	5.1
22	0	2.0
23	2.6	2.4
24	2.6	2.4
25	2.0	2.0
26	2.6	2.5
27	2.0	2.0
28	0	0
29	1.9	1.8
30	1.9	1.6
31	2.0	1.2
32	2.4	2.4
33	2.7	2.7
34	3.0	2.8
35	---	---
36	---	---
37	0	1.5
38	4.4	2.3
39	---	---
40	3.4	2.9
41	0	0
42	0	0
43	3.4	3.3
44	2.6	2.6
45	2.6	2.6
46	2.6	2.6
47	5.0	5.0
48	---	---
49	2.7	2.7
50	---	---
51	5.0	5.0
52	---	---
53	2.5	2.5
54	---	---
55	---	---
56	0.1	4.4
57	0	2.6
58	2.6	2.6
59	2.6	2.6
60	2.6	2.6
61	2.6	2.6
62	0	0
63	0	0
64	---	---
65	2.6	2.6
66	0	2.6
67	2.6	0
68	5.2	0
69	2.6	2.6
70	0.3	0
71	2.6	2.6
72	2.6	0
73	2.6	2.6
74	0	0
75	0	0
76	3.3	0
77	0	0
78	2.1	0
79	3.0	0
80	0	2.0
81	---	---
82	---	---
83	2.6	0
84	2.5	0
IC3101		
1	3.4	3.4
2	5.1	5.1
3	0	0
4	2.5	2.5
5	2.5	2.5
6	-2.7	-2.7
7	2.1	2.1
8	3.0	3.0
IC3801		
1	5.0	5.0
2	1.0	0.9
3	2.9	3.0
4	2.9	3.0
5	2.3	2.3
6	---	---
7	3.0	3.0
8	0	0
9	---	---
10	3.0	3.0
11	4.9	4.9
12	1.3	1.3
13	1.3	1.3
14	4.5	4.5
15	1.0	1.0
16	4.7	4.7
17	2.8	2.8
18	0.6	0.6
19	1.8	1.8
20	1.9	2.0
21	3.2	3.2
22	1.7	1.7
23	---	---
24	1.7	1.7
25	4.9	4.9
26	---	---
27	---	---
28	2.9	2.9
29	2.5	2.5
30	3.1	3.1
31	3.0	3.1
32	2.3	2.4
33	2.8	2.8
34	2.9	2.9
35	5.0	5.0
36	0	0
IC4201		
1	---	---
2	0	0
3	---	---
4	0	0
5	2.3	0
6	2.6	2.6
7	0	2.1
8	0.4	0.4
9	0	0
10	0	0
11	0	0
12	0	2.1
13	0	2.3
14	0	0
15	0	0
16	0	2.6
17	0	0.9
18	0	2.6
19	0	0
20	0	0
21	0	0
22	0	0.7
23	0	0
24	2.7	0
25	0	0
26	2.7	0
27	0	0
28	0	0
29	0	1.8
30	0	0
31	0	0
32	0	0
33	2.6	2.6
34	0.9	0.5
35	2.6	2.6
36	0	0
37	2.0	2.0
38	0	0
39	---	---
40	5.1	5.1
41	0	0
42	5.1	5.2
43	5.3	5.3
44	2.4	2.4
45	5.0	5.0
46	3.6	3.6
47	2.4	2.4
48	2.2	0
49	0	0
50	0	3.4
51	0	0
52	0	3.6
53	0	6.1
54	0	0
55	0	0
56	0	0
57	0	0
58	0	12.0
59	6.2	0
60	0	0
61	0	0
62	0	2.5
63	2.4	0
64	0.5	0
IC6001		
1	5.2	5.2
2	---	---
3	5.3	5.3
4	5.0	5.1
5	5.0	5.0
6	0	0
7	0	0
8	0	0
9	4.8	0
10	0.5	5.0
11	5.0	0
12	---	---
13	5.0	0
14	5.1	0
15	5.2	5.2
16	2.2	0.6
17	5.2	5.2
18	5.2	5.2
19	---	---
20	0.2	4.9
21	0	0
22	2.2	2.3
23	2.5	2.5
24	0	0
25	5.0	5.0
26	5.0	5.1
27	0	2.5
28	0	0
29	4.7	4.7
30	5.0	0
31	0.1	0
32	---	---
33	2.2	2.0
34	2.4	2.4
35	1.8	1.8
36	5.1	5.1
37	2.5	---
38	2.5	---
39	0	0
40	0	5.1
41	0	0
42	0	0
43	---	---
44	---	---
45	5.1	5.1
46	5.1	5.1
47	1.9	1.9
48	0	0
49	0	1.9
50	2.6	2.6
51	5.1	5.1
52	2.5	2.5
53	2.6	2.6
54	0	0
55	0	0
56	---	---
57	4.8	0
58	5.2	0
59	0	0
60	0	0
61	---	---
62	0	0
63	0.4	0
64	0	0
65	1.0	1.0
66	0	0
67	2.5	2.5
68	2.5	2.5
69	2.5	2.5
70	2.5	2.5
71	0	0
72	2.5	2.5
73	5.0	5.0
74	2.9	---
75	2.1	---
76	2.5	2.5
77	1.9	2.2
78	3.5	3.5
79	5.0	5.0
80	4.7	4.6
81	5.0	5.0
82	5.1	5.1
83	5.1	1.2
84	3.8	2.8
85	0	0
86	4.8	4.8
87	5.2	5.2
88	1.8	1.9
89	5.2	5.2
90	5.2	5.2
91	0	0
92	0	0
93	4.7	4.7
94	1.9	1.9
95	0	0
96	5.2	5.2
97	0	0
98	2.5	2.5
99	5.0	5.0
100	0.2	0
IC6002		
1	1.2	1.2
2	0	0
3	1.2	1.2
4	---	---
IC6003		
1	2.4	2.4
2	1.2	1.2
3	0	0
4	---	---
IC6301 (A)		
1	-18.0	-25.8
2	-25.9	-25.8
3	-26.0	-26.0
4	-22.4	-25.9
5	-25.9	-26.0
6	-25.9	-25.9
7	-25.9	-25.9
8	-0.2	-26.0
9	---	---
10	---	---
11	---	---
12	---	---
13	---	---
14	---	---
15	---	---
16	3.3	0
17	0	0
18	---	---
19	0	5.1
20	---	---
21	---	---
22	---	---
23	---	---
24	0	0
25	---	---
26	---	---
27	---	---
28	---	---
29	---	---
30	---	---
31	11.6	11.6
32	-8.4	-8.4
33	0	0
34	-8.4	0
35	0	0
36	0	0
37	0	0
38	0	0
39	0	0
40	-29.8	-29.9
41	-29.9	-29.9
42	-29.9	-29.9
43	-26.8	-26.8
44	-29.8	-29.9
45	-23.5	-23.7
46	0	0
47	-26.7	-26.9
48	-26.9	-26.9
49	-26.9	-26.9
50	-26.8	-26.9
51	-26.9	-26.9
52	0	0
53	0	-26.9
54	-26.9	-26.9
55	-26.9	0
56	-26.9	-26.9
57	5.2	5.2
58	-29.8	-29.8
59	0	0
60	0	0
61	0	0
62	0	0
63	0	0
64	0	0
Q1001		
E	0	0
C	165.1	165.1
B	0.3	0.3
Q1002		
E	0	0
C	0.3	0.3
B	0.6	0.6
Q1003		
E	-0.6	-0.6
C	4.1	4.1
B	0	0
Q1004		
E	4.4	4.4
C	0.1	0.1
B	4.1	4.1
Q1005		
E	5.1	5.1
C	5.2	5.2
B	4.7	4.7
Q1051		
E	12.0	12.0
C	13.2	13.2
B	11.6	12.6
Q1052		
E	0	0
C	11.6	12.6
B	0.7	0.7
Q1053		
E	5.3	5.3
C	5.1	5.1
B	6.0	6.0
Q1070		
E	12.0	12.0
C	0	0
B	0	0
Q3001		
E	2.8	2.8
C	0	0
B	2.0	2.0
Q3875		
E	2.8	2.8
C	0	0
B	2.0	2.0
Q4001		
E	5.1	5.1
C	-18.7	5.1
B	5.1	4.4
Q4002		
E	-13.6	0
C	0	0
B	-19.1	0.8
Q4003		
E	-13.6	0
C	0	0
B	-18.6	0.8
Q4004		
E	0	0
C	2.5	2.5
B	0	0
Q4005		
E	0	0
C	0	0
B	2.5	2.5
Q4006		
E	0	0
C	0	0
B	2.5	2.5
Q4007		
E	0	0
C	6.2	6.2
B	2.5	2.5
Q4101		
E	0	0
C	11.3	0.5
B	0.2	0.5
Q6001		
E	0	0
C	5.0	5.0
B	0	0
Q6002		
E	12.1	12.1
C	11.8	0.5
B	12.1	11.2
Q6003		
E	0.4	0
C	11.2	12.1
B	5.0	0
Q6005		
E	5.1	5.1
C	5.1	5.1
B	4.4	4.4
Q6006		
E	0	0
C	0	0
B	0.8	0.8
Q6007		
E	5.1	5.1
C	0	0
B	0	0
Q6009		
E	0	0
C	5.1	5.1
B	---	---
Q6010		
E	0	0
C	5.1	5.1
B	---	---
TP1001	0	0
TP1002	36.5	36.5
TP1003	13.5	13.5
TP1004	-30.0	-30.0
TP1005	5.1	5.1
TP1006	-18.9	-18.9
TP1007	-24.2	-24.2
TP1008	5.1	5.1

MODE / PIN NO.	REC	PLAY
TP1009	0	0
TP1050	5.3	5.3
TP1051	5.3	5.3
TP1058	12.0	12.0
TP3001	2.8	2.8
TP3002	2.7	2.3
TP3003	2.7	2.7
TP3004	4.3	4.3
TP3005	2.6	2.6
TP3006	2.5	2.5
TP3007	2.1	2.1
TP3008	3.4	3.4
TP3009	3.0	5.0
TP3010	5.1	5.1
TP3101	3.2	3.2
TP3102	3.0	0
TP3103	1.8	1.8
TP3150	3.9	3.1
TP3151	2.4	2.4
TP3401	3.1	3.8
TP3801	4.9	4.9
TP3802	4.9	4.9
TP3803	1.3	1.3
TP3804	2.6	2.6
TP3805	4.9	4.9
TP4002	0	0
TP4003	0	0
TP4011	0	0
TP4101	0	0
TP4102	0	0
TP4103	0	0
TP4201	0	0
TP4202	0	0
TP4203	0	0
TP4204	0	0
TP4205	0	1.8
TP4207	0	0
TP4208	0.4	0.4
TP6001	–	–
TP6002	5.2	5.2
TP6003	3.4	2.3
TP6004	4.7	4.6
TP6005	5.1	5.1
TP6007	0	0
TP6008	0	0
TP6009	5.2	5.2
TP6014	–	–
TP6016	3.5	3.5
TP6017	0	0
TP6018	5.2	5.2
TP6019	0	0
TP6201	2.2	2.2
TP6202	2.4	2.4
TP6203	2.5	2.5

MODE / PIN NO.	REC	PLAY
TP6204	1.0	1.0
TP6205	2.6	2.6

Hi-Fi AUDIO/VIDEO HEAD AMP CIRCUIT

MODE / PIN NO.	REC	PLAY
IC2601		
1	13.0	13.0
2	13.0	13.0
3	13.5	13.5
4	1.2	1.2
5	5.1	5.1
6	0.9	0.9
7	1.0	1.0
8	0.7	0.7
9	2.6	2.6
10	1.5	1.5
11	0	0
12	3.9	3.9
13	3.9	3.9
14	3.9	3.9
15	0.1	0.1
16	13.2	13.2
IC3501		
1	2.6	2.6
2	0	4.2
3	0.3	1.4
4	0	0.7
5	0	0
6	0	0.7
7	0.2	1.4
8	0	0
9	0	0
10	0.2	2.2
11	0	0
12	0	0
13	0	0
14	0.2	2.2
15	---	---
16	6.3	0
17	6.3	0
18	6.3	0
19	---	---
20	---	---
21	---	---
22	---	---
23	---	---
24	---	---
25	11.9	0.5
26	5.0	5.0
27	0	0
28	0	0
29	0	0
30	2.7	2.3
31	5.1	0.1
32	0.1	0.1
33	0	0
34	0.1	0.7
35	12.0	12.0
36	0.1	5.0

MODE / PIN NO.	REC	PLAY
IC4401		
1	0	2.6
2	4.0	0
3	0.6	0
4	0	0
5	0.6	0.7
6	4.0	0
7	1.0	1.0
8	0.7	0.7
9	2.6	2.6
10	5.1	5.1
11	0	0
12	0	0
13	3.9	3.9
14	3.9	3.9
15	0.1	0.1
16	13.0	13.0
TP3501	0	0
TP4402	4.0	0
TP4405	0	0
TP4406	2.6	2.6

CAPSTAN STATOR CIRCUIT

MODE / PIN NO.	REC	PLAY
IC2501		
1	13.0	13.0
2	13.0	13.0
3	13.5	13.5
4	1.2	1.2
5	1.2	1.2
6	1.2	1.2
7	0.1	2.7
8	0	0
9	2.6	2.6
10	1.5	1.5
11	2.6	2.6
12	0.5	0.5
13	3.9	3.9
14	3.9	3.9
15	0	0
16	0	0
17	---	---
18	13.5	13.5
19	2.8	2.8
20	0	0.7
21	2.8	2.8
22	0	0.7
23	0.2	1.4
24	0	0
25	0	0
26	13.5	13.5
27	---	---
28	5.1	5.1

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

SYSTEM CONTROL/SERVO

MODE / PIN NO.	STOP	FF	REW
IC2501			
1	13.0	13.0	13.0
2	13.0	13.0	13.0
3	13.5	13.5	13.5
4	1.2	1.2	1.2
5	1.2	1.2	1.2
6	1.2	1.2	1.2
7	0.1	0.1	0.1
8	0	0	0
9	2.6	2.6	2.6
10	1.5	1.5	1.5
11	2.6	2.6	2.6
12	0.5	0.5	0.5
13	3.9	3.9	3.9
14	3.9	3.9	3.9
15	0	0	0
16	0	0	0
17	---	---	---
18	13.5	13.5	13.5
19	2.8	2.8	2.8
20	0	0	0
21	2.8	2.8	2.8
22	0	0	0
23	0.2	0.2	0.2
24	1.8	0	0
25	1.8	0	0
26	13.5	13.5	13.5
27	---	---	---
28	5.2	5.2	5.2
IC2601			
1	13.0	13.0	13.0
2	13.0	13.0	13.0
3	13.5	13.5	13.5
4	1.2	1.2	1.2
5	5.1	5.1	5.1
6	0.9	0.9	0.9
7	1.0	1.0	1.0
8	0.7	0.7	0.7
9	2.6	2.6	2.6
10	1.5	1.5	1.5
11	0	0	0
12	3.9	3.9	3.9
13	3.9	3.9	3.9
14	3.9	3.9	3.9
15	0.1	0.1	0.1
16	13.2	13.2	13.2
IC6001			
1	5.2	5.2	5.2
2	0	0	0
3	---	---	---
4	0	0	0
5	5.0	5.0	5.0
6	0	0	0
7	0	0	0

MODE / PIN NO.	STOP	FF	REW
8	0	0	0
9	5.0	5.0	5.0
10	0.5	5.0	5.0
11	0	0	0
12	5.2	5.2	5.2
13	0	0	0
14	4.9	4.9	4.9
15	5.2	5.2	5.2
16	20.5	0.5	0.5
17	5.2	5.2	5.2
18	5.2	5.2	5.2
19	---	---	---
20	4.9	4.9	4.9
21	2.5	0	0
22	4.9	2.2	2.2
23	2.6	2.6	2.6
24	0	0	0
25	0	5.0	5.0
26	2.5	2.5	2.5
27	0	0	0
28	0	0	0
29	4.7	4.7	4.7
30	0	0	0
31	0	0	0
32	0	0	0
33	2.6	2.0	2.0
34	4.5	2.0	2.0
35	---	---	---
36	5.1	5.1	5.1
37	2.5	2.5	2.5
38	2.5	2.5	2.5
39	0	0	0
40	---	---	---
41	---	---	---
42	0	0	0
43	---	---	---
44	---	---	---
45	---	---	---
46	2.0	1.0	1.0
47	1.9	1.9	1.9
48	0	0	0
49	1.9	1.9	1.9
50	2.6	2.6	2.6
51	5.1	5.1	5.1
52	2.5	2.5	2.5
53	2.6	2.6	2.6
54	5.2	5.2	5.2
55	5.2	5.2	5.2
56	---	---	---
57	---	---	---
58	4.9	4.9	4.9
59	5.0	5.0	5.0
60	1.9	1.9	1.9
61	0	0	0

MODE / PIN NO.	STOP	FF	REW
62	0.4	0.4	0.4
63	5.0	5.0	5.0
64	0	0	0
65	1.0	1.0	1.0
66	0	0	0
67	2.5	2.5	2.5
68	2.5	2.5	2.5
69	2.5	2.5	2.5
70	2.5	2.5	2.5
71	0	0	0
72	2.5	2.5	2.5
73	5.0	5.0	5.0
74	2.5	2.5	2.5
75	2.5	2.1	2.1
76	2.5	2.5	2.5
77	2.3	1.9	1.9
78	3.5	3.5	3.5
79	5.0	5.0	5.0
80	4.7	4.7	4.7
81	5.4	5.0	5.0
82	0	5.0	5.0
83	5.0	5.0	5.0
84	3.8	3.8	3.8
85	5.2	5.2	5.2
86	4.8	4.8	4.8
87	5.2	5.2	5.2
88	1.7	1.8	1.8
89	5.2	5.2	5.2
90	5.2	5.2	5.2
91	0	0	0
92	0	0	0
93	4.8	4.7	4.7
94	1.7	1.9	1.9
95	0	0	0
96	0	5.2	5.2
97	5.2	0	0
98	2.5	2.5	2.5
99	5.0	5.0	5.0
100	0.2	0.2	0.2
IC6002			
1	1.2	1.2	1.2
2	0	0	0
3	1.2	1.2	1.2
4	---	---	---
IC6003			
1	2.4	2.4	2.4
2	1.2	1.2	1.2
3	0	0	0
4	---	---	---
Q6001			
E	0	0	0
C	0	5.0	5.0
B	0	0	0

MODE / PIN NO.	STOP	FF	REW
Q6002			
E	12.5	12.1	12.1
C	0.5	1.0	1.0
B	12.1	12.1	12.1
Q6003			
E	0	0	0
C	12.1	12.1	12.1
B	0	0	0
Q6005			
E	5.1	5.1	5.1
C	5.1	5.1	5.1
B	4.4	4.4	4.4
Q6006			
E	0	0	0
C	0	0	0
B	0.8	0.8	0.8
Q6007			
E	5.1	5.1	5.1
C	0	0	0
B	0	0	0
Q6009			
E	0	0	0
C	5.1	5.1	5.1
B	---	---	---
Q6010			
E	0	0	0
C	5.1	5.1	5.1
B	---	---	---
TP6001	---	---	---
TP6002	0.1	5.2	5.2
TP6003	3.8	3.8	3.8
TP6004	5.1	5.1	5.1
TP6005	5.1	5.1	5.1
TP6007	0	0	0
TP6008	0	0	0
TP6009	5.2	5.2	5.2
TP6014	---	---	---
TP6016	3.5	3.5	3.5
TP6017	5.2	0	0
TP6018	0	5.2	5.2
TP6019	0	0	0
TP6201	2.6	2.0	2.0
TP6202	4.5	2.4	2.4
TP6203	2.5	2.5	2.5
TP6204	1.0	1.0	1.0
TP6205	2.6	2.6	2.6
TP6206	2.5	2.5	2.5
TP6207	2.5	2.5	2.5
TP6208	2.4	2.6	2.6
TP6209	4.9	2.2	2.2
TP6210	2.3	1.9	1.9

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

8 CIRCUIT BOARD LAYOUT

8.1. MAIN (POWER SUPPLY / SIGNAL PROCESS / AUDIO / Hi-Fi AUDIO / SYSTEM CONTROL / SERVO / OPERATION) C.B.A. VEPS6052HA (A)

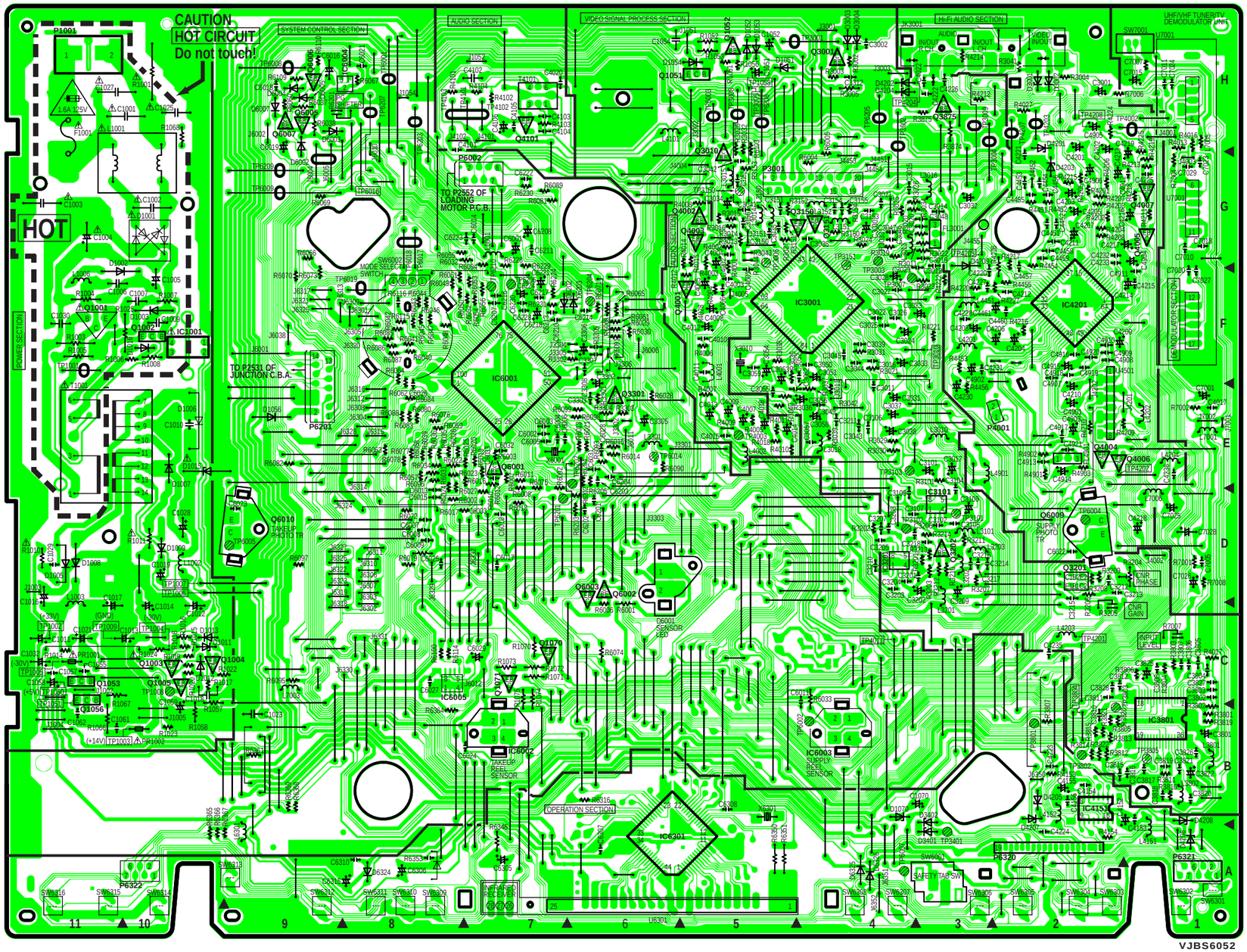
CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLASE ONLY WITH THE SAME TYPE 1.6A 125V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'T INCENDIE IN'I UTILISERQUE DES FUSIBLE DE MÉME TYPE 1.6A 125V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.



COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPONENT PARTS LOCATION GUIDE
MAIN C.B.A.

MAIN	
TRANSISTOR	
Q1001	F-11
Q1002	F-10
Q1003	C-10
Q1004	C-9
Q1005	C-10
Q1051	H-6
Q1052	H-5
Q1053	C-11
Q1056	B-11
Q1070	C-7
Q1071	C-7
Q3001	H-4
Q3010	H-5
Q3150	G-5
Q3151	G-4
Q3201	D-2
Q3202	D-3
Q3301	E-6
Q3875	H-3
Q4001	F-6
Q4002	G-6
Q4003	G-5
Q4004	E-2
Q4005	G-1
Q4006	E-1
Q4007	G-1
Q4101	H-7
Q6001	E-7
Q6002	D-6
Q6003	D-6
Q6005	H-9
Q6006	H-9
Q6007	H-9
Q6009	D-2
Q6010	D-9

MAIN	
IC	
IC1001	F-10
IC3001	F-4
IC3101	D-3
IC3201	D-4
IC3801	B-1
IC4151	B-2
IC4201	F-2
IC6001	F-7
IC6002	B-7
IC6003	B-4
IC6004	H-8
IC6005	C-8
IC6301	A-6

MAIN	
CONNECTOR	
P1001	H-11
P3001	G-5
P4001	E-3
P6002	G-8
P6201	E-9
P6320	A-2
P6321	A-1
P6322	A-10

MAIN	
ADJUSTMENT	
R3204	D-1
R3205	C-2
R6201	H-9
R7007	C-1

MAIN	
TEST POINT	
TP1001	F-11
TP1002	C-11
TP1003	B-11
TP1004	C-10
TP1005	C-11
TP1006	D-10
TP1007	D-10
TP1008	C-10
TP1009	C-11
TP1050	C-11
TP1051	C-11
TP1058	H-5
TP3001	H-4
TP3002	H-4
TP3003	F-4
TP3004	G-2
TP3005	H-5
TP3006	F-5
TP3007	F-4
TP3008	H-5
TP3009	H-3
TP3010	F-3
TP3101	D-3
TP3102	D-4
TP3103	E-4
TP3150	G-5
TP3151	G-4
TP3401	A-3
TP3801	B-2
TP3802	B-2
TP3803	C-1
TP3804	B-2
TP3805	B-1
TP4002	H-2
TP4003	E-5

MAIN	
TEST POINT	
TP4011	C-4
TP4101	H-8
TP4102	H-7
TP4103	H-8
TP4201	C-2
TP4202	E-1
TP4203	H-2
TP4204	H-4
TP4205	G-3
TP4207	H-2
TP4208	H-2
TP6001	H-8
TP6002	B-4
TP6003	H-5
TP6004	D-2
TP6005	D-9
TP6007	A-4
TP6008	H-9
TP6009	G-9
TP6014	E-6
TP6016	G-8
TP6017	F-8
TP6018	F-8
TP6019	F-9
TP6201	D-7
TP6202	E-6
TP6203	G-8
TP6204	F-6
TP6205	H-4
TP6206	F-7
TP6207	H-8
TP6208	H-5
TP6209	G-9
TP6210	F-7

LEADLESS COMPONENT PARTS LOCATION GUIDE
MAIN C.B.A.

Q1003	C-10	R3027	G-5	R3822	B-2	R4454	G-2	R6057	E-8	R6230	G-7	C3106	E-4	C4006	F-5	C6003	E-7
Q1004	C-9	R3028	H-5	R3875	H-3	R4455	F-2	R6058	E-8	R6231	F-7	C3107	D-4	C4010	F-5	C6004	E-7
Q1005	C-10	R3029	E-4	R4001	F-5	R4456	E-3	R6059	E-8	R6316	B-6	C3108	D-4	C4011	F-5	C6005	E-7
Q1052	H-5	R3030	E-4	R4002	G-5	R4901	E-2	R6060	H-9	R6353	A-8	C3150	G-5	C4015	E-5	C6006	E-7
Q1070	C-7	R3031	F-4	R4003	F-5	R4902	E-2	R6061	F-6	R6361	B-9	C3151	G-5	C4017	E-1	C6007	D-8
Q1071	C-7	R3032	H-5	R4004	F-5	R4903	E-2	R6062	E-8	R6364	B-8	C3152	G-5	C4020	H-7	C6008	D-8
Q3001	H-4	R3033	G-4	R4005	E-5	R6002	D-8	R6063	E-8	R6365	B-10	C3153	G-4	C4022	H-3	C6009	D-8
Q3010	H-5	R3034	G-3	R4006	F-5	R6004	G-4	R6064	F-8	R6366	B-10	C3154	G-4	C4101	H-8	C6010	D-7
Q3150	G-5	R3035	F-5	R4007	E-5	R6005	H-4	R6065	F-6	R6367	B-9	C3155	G-4	C4103	H-7	C6011	C-5
Q3151	G-4	R3036	E-5	R4008	G-6	R6006	C-6	R6066	G-9	R6368	B-9	C3156	G-5	C4104	H-7	C6012	E-7
Q3201	D-2	R3037	E-4	R4009	E-5	R6007	D-7	R6067	H-8	R6369	B-9	C3201	D-4	C4105	H-7	C6013	D-8
Q3202	D-3	R3038	F-5	R4010	E-5	R6008	D-7	R6068	F-6	R7001	D-1	C3203	D-4	C4153	A-1	C6014	G-7
Q3301	E-6	R3039	E-4	R4011	E-5	R6010	D-7	R6069	G-9	R7002	E-1	C3204	D-4	C4154	B-2	C6015	D-8
Q3875	H-3	R3040	E-5	R4012	F-6	R6011	E-7	R6070	F-9	R7004	G-1	C3205	D-4	C4156	B-2	C6017	D-7
Q4001	F-6	R3041	H-2	R4013	H-1	R6012	E-7	R6071	F-6	R7006	H-1	C3206	D-3	C4211	G-2	C6018	H-9
Q4002	G-6	R3043	G-5	R4014	G-5	R6013	E-6	R6072	D-8	R7008	D-1	C3207	D-4	C4212	F-2	C6021	H-8
Q4003	G-5	R3044	F-5	R4015	F-5	R6014	E-6	R6073	F-9	C1010	E-10	C3208	D-4	C4215	F-1	C6022	D-2
Q4004	E-2	R3101	E-3	R4016	H-1	R6015	E-6	R6075	E-7	C1029	D-11	C3210	D-4	C4219	H-2	C6023	D-9
Q4005	G-1	R3150	G-4	R4017	C-1	R6016	E-7	R6076	E-8	C1055	C-11	C3211	E-4	C4220	F-3	C6024	B-8
Q4006	E-1	R3151	G-5	R4018	E-5	R6017	D-8	R6077	E-8	C1057	C-11	C3212	D-2	C4221	G-2	C6025	D-8
Q4007	G-1	R3152	G-5	R4027	H-2	R6018	D-7	R6078	E-8	C1061	B-11	C3213	D-1	C4222	H-3	C6026	E-8
Q4101	H-7	R3153	G-5	R4028	F-5	R6019	E-7	R6079	D-8	C1062	B-11	C3214	D-2	C4223	B-2	C6027	C-8
Q6001	E-7	R3154	G-4	R4101	H-8	R6020	E-7	R6080	E-8	C3002	H-4	C3215	C-2	C4224	A-2	C6028	E-6
Q6002	D-6	R3201	D-3	R4102	H-7	R6021	E-6	R6081	G-7	C3011	E-4	C3216	D-3	C4225	G-1	C6031	E-6
Q6003	D-6	R3202	D-4	R4103	H-7	R6022	E-8	R6082	E-9	C3014	G-3	C3217	D-3	C4226	H-3	C6032	E-7
Q6005	H-9	R3203	D-3	R4104	H-7	R6023	E-8	R6083	E-8	C3015	G-4	C3218	D-4	C4227	F-3	C6201	D-6
Q6006	H-9	R3206	C-2	R4153	B-2	R6024	D-8	R6084	E-8	C3016	F-4	C3303	E-6	C4228	F-3	C6202	D-6
Q6007	H-9	R3207	D-3	R4154	A-2	R6025	E-7	R6085	F-8	C3018	F-3	C3306	F-6	C4231	F-3	C6203	D-6
R1006	F-11	R3208	D-2	R4201	G-2	R6026	E-8	R6086	F-8	C3019	G-3	C3307	F-6	C4232	G-2	C6204	E-6
R1014	C-11	R3209	D-2	R4202	G-2	R6027	D-8	R6087	F-8	C3020	G-4	C3308	E-6	C4233	G-2	C6207	F-7
R1015	C-10	R3210	D-3	R4203	G-2	R6028	E-6	R6088	E-8	C3021	G-4	C3312	H-4	C4235	C-2	C6210	F-7
R1016	C-10	R3211	D-3	R4204	G-2	R6029	F-6	R6089	G-7	C3022	F-4	C3802	C-1	C4236	E-1	C6211	G-7
R1017	C-10	R3212	D-3	R4205	G-2	R6030	F-6	R6090	E-6	C3025	F-4	C3803	C-1	C4451	G-2	C6213	F-7
R1018	C-10	R3213	D-4	R4206	G-2	R6031	E-8	R6091	F-6	C3026	F-4	C3804	C-1	C4452	G-2	C6214	F-6
R1019	C-10	R3214	D-3	R4207	G-2	R6032	G-8	R6092	E-7	C3027	F-4	C3805	C-1	C4453	G-2	C6216	F-7
R1020	C-10	R3301	E-6	R4208	G-2	R6034	E-8	R6093	E-6	C3035	G-5	C3806	C-1	C4454	G-2	C6217	F-7
R1022	C-10	R3302	F-7	R4209	E-2	R6035	E-8	R6094	G-8	C3036	G-4	C3807	C-1	C4455	G-2	C6222	G-7
R1023	B-10	R3303	E-6	R4210	E-2	R6036	E-8	R6095	C-9	C3039	F-4	C3808	C-1	C4456	G-2	C6223	G-8
R1051	H-5	R3304	E-6	R4211	G-1	R6039	E-8	R6096	E-8	C3041	G-5	C3810	B-2	C4457	F-2	C6228	F-7
R1056	H-5	R3305	F-6	R4212	H-3	R6040	F-8	R6097	D-9	C3042	G-5	C3811	C-2	C4458	G-2	C6230	F-7
R3002	H-4	R3801	B-1	R4213	G-1	R6041	F-8	R6098	E-6	C3043	E-4	C3812	C-2	C4459	G-2	C6307	A-6
R3003	H-4	R3802	B-1	R4214	H-3	R6042	F-8	R6099	E-7	C3044	F-4	C3815	B-2	C4460	F-3	C6308	B-5
R3004	H-2	R3803	C-1	R4215	G-2	R6043	F-8	R6100	C-8	C3045	F-4	C3816	B-1	C4907	E-2	C6310	A-9
R3011	G-4	R3804	C-1	R4216	F-2	R6044	F-8	R6103	G-5	C3046	G-4	C3817	B-1	C4908	F-2	C7005	D-1
R3013	G-5	R3805	B-2	R4217	G-2	R6045	F-8	R6109	H-9	C3047	G-4	C3818	B-1	C4909	F-2	C7007	H-1
R3014	G-5	R3806	C-2	R4218	G-1	R6046	F-8	R6110	H-9	C3048	G-3	C3819	B-1	C4910	F-2	C7010	G-1
R3015	G-5	R3807	B-2	R4219	G-1	R6047	F-8	R6114	C-8	C3049	E-4	C3820	B-1	C4911	F-2	C7011	H-1
R3016	G-5	R3810	B-1	R4220	F-3	R6048	F-8	R6115	F-8	C3050	F-4	C3821	B-1	C4912	G-2	C7018	G-1
R3019	G-4	R3811	B-1	R4221	F-3	R6049	F-8	R6116	F-8	C3052	F-4	C3826	B-1	C4913	E-2	C7020	F-1
R3020	G-4	R3812	B-2	R4222	F-3	R6050	F-8	R6202	D-6	C3055	E-5	C3827	C-1	C4916	F-2	C7023	G-1
R3021	F-4	R3813	B-2	R4224	H-2	R6051	F-8	R6203	D-6	C3057	E-4	C3828	C-2	C4917	E-2	C7024	H-1
R3022	G-3	R3814	B-2	R4225	H-1	R6052	F-7	R6204	E-6	C3059	F-5	C3829	B-2	C4918	F-2	C7027	F-1
R3023	F-3	R3815	B-2	R4227	F-2	R6053	F-7	R6205	D-6	C3062	E-4	C4001	F-5	C4919	F-2	C7029	G-1
R3024	G-4	R3819	B-1	R4451	G-2	R6054	F-7	R6224	F-7	C3102	D-3	C4003	F-5	C4920	F-2	L7005	H-1
R3025	G-4	R3820	B-1	R4452	G-2	R6055	G-8	R6228	G-7	C3104	E-3	C4004	G-5	C4921	E-2		
R3026	G-4	R3821	B-2	R4453	F-3	R6056	F-7	R6229	G-7	C3105	D-3	C4005	F-5	C6002	E-7		

8.2. MAIN (POWER SUPPLY / SIGNAL PROCESS / AUDIO / Hi-Fi AUDIO / SYSTEM CONTROL / SERVO / OPERATION) C.B.A. VEPS6055HA (B)

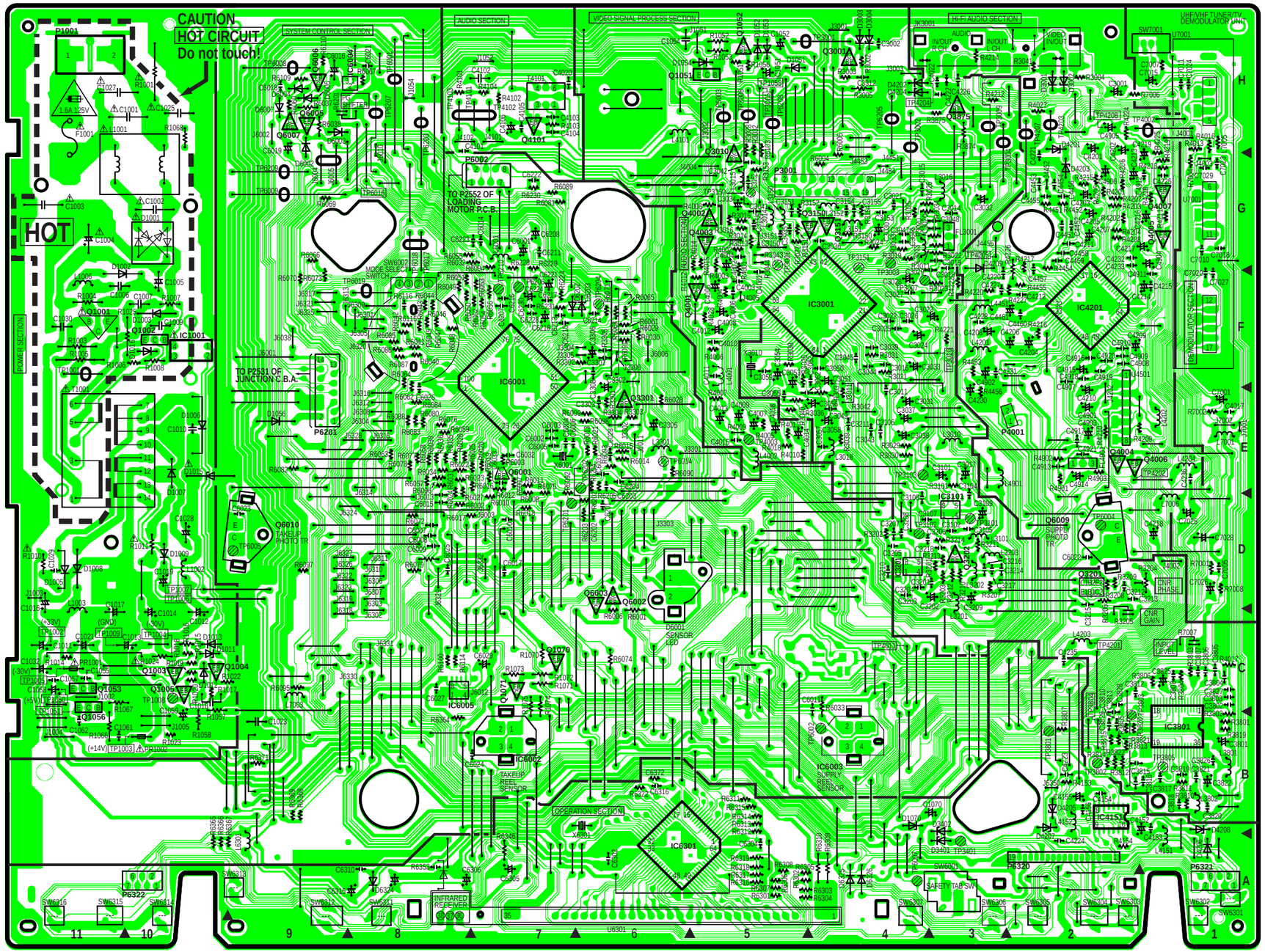
CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLASE ONLY WITH THE SAME TYPE 1.6A 125V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'T INCENDIE N'I UTILISERQUE DES FUSIBLE DE MÉME TYPE 1.6A 125V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.



COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPONENT PARTS LOCATION GUIDE
MAIN C.B.A.

MAIN	
TRANSISTOR	
Q1001	F-11
Q1002	F-10
Q1003	C-10
Q1004	C-9
Q1005	C-10
Q1051	H-6
Q1052	H-5
Q1053	C-11
Q1056	B-11
Q1070	C-7
Q1071	C-7
Q3001	H-4
Q3010	H-5
Q3150	G-5
Q3151	G-4
Q3201	D-2
Q3202	D-3
Q3301	E-6
Q3875	H-3
Q4001	F-6
Q4002	G-6
Q4003	G-5
Q4004	E-2
Q4005	G-1
Q4006	E-1
Q4007	G-1
Q4101	H-7
Q6001	E-7
Q6002	D-6
Q6003	D-6
Q6005	H-9
Q6006	H-9
Q6007	H-9
Q6009	D-2
Q6010	D-9

MAIN	
IC	
IC1001	F-10
IC3001	F-4
IC3101	D-3
IC3201	D-4
IC3801	B-1
IC4151	B-2
IC4201	F-2
IC6001	F-7
IC6002	B-7
IC6003	B-4
IC6004	H-8
IC6005	C-8
IC6301	A-6

MAIN	
CONNECTOR	
P1001	H-11
P3001	G-5
P4001	E-3
P6002	G-8
P6201	E-9
P6320	A-2
P6321	A-1
P6322	A-10

MAIN	
ADJUSTMENT	
R3204	D-1
R3205	C-2
R6201	H-9
R7007	C-1

MAIN	
TEST POINT	
TP1001	F-11
TP1002	C-11
TP1003	B-11
TP1004	C-10
TP1005	C-11
TP1006	D-10
TP1007	D-10
TP1008	C-10
TP1009	C-11
TP1050	C-11
TP1051	C-11
TP1058	H-5
TP3001	H-4
TP3002	H-4
TP3003	F-4
TP3004	G-2
TP3005	H-5
TP3006	F-5
TP3007	F-4
TP3008	H-5
TP3009	H-3
TP3010	F-3
TP3101	D-3
TP3102	D-4
TP3103	E-4
TP3150	G-5
TP3151	G-4
TP3401	A-3
TP3801	B-2
TP3802	B-2
TP3803	C-1
TP3804	B-2
TP3805	B-1
TP4002	H-2
TP4003	E-5

MAIN	
TEST POINT	
TP4011	C-4
TP4101	H-8
TP4102	H-7
TP4103	H-8
TP4201	C-2
TP4202	E-1
TP4203	H-2
TP4204	H-4
TP4205	G-3
TP4207	H-2
TP4208	H-2
TP6001	H-8
TP6002	B-4
TP6003	H-5
TP6004	D-2
TP6005	D-9
TP6007	A-4
TP6008	H-9
TP6009	G-9
TP6014	E-6
TP6016	G-8
TP6017	F-8
TP6018	F-8
TP6019	F-9
TP6201	D-7
TP6202	E-6
TP6203	G-8
TP6204	F-6
TP6205	H-4
TP6206	F-7
TP6207	H-8
TP6208	H-5
TP6209	G-9
TP6210	F-7

LEADLESS COMPONENT PARTS LOCATION GUIDE
MAIN C.B.A.

Q1003	C-10	R3029	E-4	R4003	F-5	R6002	D-8	R6065	F-6	R6311	B-5	C3055	E-5	C3829	B-2	C4920	F-2
Q1004	C-9	R3030	E-4	R4004	F-5	R6004	G-4	R6066	G-9	R6312	B-5	C3057	E-4	C4001	F-5	C4921	E-2
Q1005	C-10	R3031	F-4	R4005	E-5	R6005	H-4	R6067	H-8	R6313	B-5	C3059	F-5	C4003	F-5	C6002	E-7
Q1052	H-5	R3032	H-5	R4006	F-5	R6006	C-6	R6068	F-6	R6314	B-5	C3062	E-4	C4004	G-5	C6003	E-7
Q1070	C-7	R3033	G-4	R4007	E-5	R6007	E-7	R6069	G-9	R6315	B-5	C3102	D-3	C4005	F-5	C6004	E-7
Q1071	C-7	R3034	G-3	R4008	G-6	R6008	D-7	R6070	F-9	R6316	A-5	C3104	E-3	C4006	F-5	C6005	E-7
Q3001	H-4	R3035	F-5	R4009	E-5	R6010	D-7	R6071	F-6	R6317	A-5	C3105	D-3	C4010	F-5	C6006	E-7
Q3010	H-5	R3036	E-5	R4010	E-5	R6011	E-7	R6072	D-8	R6318	A-5	C3106	E-4	C4011	F-5	C6007	D-8
Q3150	G-5	R3037	E-4	R4011	E-5	R6012	E-7	R6073	F-9	R6319	A-5	C3107	D-4	C4015	E-5	C6008	D-8
Q3151	G-4	R3038	F-5	R4012	F-6	R6013	E-6	R6075	E-7	R6322	B-6	C3108	D-4	C4017	E-1	C6009	D-8
Q3201	D-2	R3039	E-4	R4013	H-1	R6014	E-6	R6076	E-8	R6353	A-8	C3150	G-5	C4020	H-7	C6010	D-7
Q3202	D-3	R3040	E-5	R4014	G-5	R6015	E-6	R6077	E-8	R6364	B-8	C3151	G-5	C4022	H-3	C6011	C-5
Q3301	E-6	R3041	H-2	R4015	F-5	R6016	E-7	R6078	E-8	R6365	B-10	C3152	G-5	C4101	H-8	C6012	E-7
Q3875	H-3	R3043	G-5	R4016	H-1	R6017	D-8	R6079	D-8	R6366	B-10	C3153	G-4	C4103	H-7	C6013	D-8
Q4001	F-6	R3044	F-5	R4017	C-1	R6018	D-7	R6080	E-8	R6367	B-9	C3154	G-4	C4104	H-7	C6014	G-7
Q4002	G-6	R3101	E-3	R4018	E-5	R6019	E-7	R6081	G-7	R6368	B-9	C3155	G-4	C4105	H-7	C6015	D-8
Q4003	G-5	R3150	G-4	R4027	H-2	R6020	E-7	R6082	E-9	R6369	B-9	C3156	G-5	C4153	A-1	C6017	D-7
Q4004	E-2	R3151	G-5	R4028	F-5	R6021	E-6	R6083	E-8	R6371	B-9	C3201	D-4	C4154	B-2	C6018	H-9
Q4005	G-1	R3152	G-5	R4101	H-8	R6022	E-8	R6084	E-8	R6372	B-6	C3203	D-4	C4156	B-2	C6021	H-8
Q4006	E-1	R3153	G-5	R4102	H-7	R6023	E-8	R6085	F-8	R7001	D-1	C3204	D-4	C4211	G-2	C6022	D-2
Q4007	G-1	R3154	G-4	R4103	H-7	R6024	D-8	R6086	F-8	R7002	E-1	C3205	D-4	C4212	F-2	C6023	D-9
Q4101	H-7	R3201	D-3	R4104	H-7	R6025	E-7	R6087	F-8	R7004	G-1	C3206	D-3	C4215	F-1	C6024	B-8
Q6001	E-7	R3202	D-4	R4153	B-2	R6026	E-8	R6088	E-8	R7006	H-1	C3207	D-4	C4219	H-2	C6025	D-8
Q6002	D-6	R3203	D-3	R4154	A-2	R6027	D-8	R6089	G-7	R7008	D-1	C3208	D-4	C4220	F-3	C6026	E-8
Q6003	D-6	R3206	C-2	R4201	G-2	R6028	E-6	R6090	E-6	C1010	E-10	C3210	D-4	C4221	G-2	C6027	C-8
Q6005	H-9	R3207	D-3	R4202	G-2	R6029	F-6	R6091	F-6	C1029	D-11	C3211	E-4	C4222	H-3	C6028	E-6
Q6006	H-9	R3208	D-2	R4203	G-2	R6030	F-6	R6092	E-7	C1055	C-11	C3212	D-2	C4223	B-2	C6031	E-6
Q6007	H-9	R3209	D-2	R4204	G-2	R6031	E-8	R6093	E-6	C1057	C-11	C3213	D-1	C4224	A-2	C6032	E-7
R1006	F-11	R3210	D-3	R4205	G-2	R6032	G-8	R6094	G-8	C1061	B-11	C3214	D-2	C4225	G-1	C6201	D-6
R1014	C-11	R3211	D-3	R4206	G-2	R6034	E-8	R6095	C-9	C1062	B-11	C3215	C-2	C4226	H-3	C6202	D-6
R1015	C-10	R3212	D-3	R4207	G-2	R6035	E-8	R6096	E-8	C3002	H-4	C3216	D-3	C4227	F-3	C6203	E-6
R1016	C-10	R3213	D-4	R4208	G-2	R6036	E-8	R6097	D-9	C3011	E-4	C3217	D-3	C4228	F-3	C6204	E-6
R1017	C-10	R3214	D-3	R4209	E-2	R6039	E-8	R6098	E-6	C3014	G-3	C3218	D-4	C4231	F-3	C6207	F-7
R1018	C-10	R3301	E-6	R4210	E-2	R6040	F-8	R6099	E-7	C3015	G-4	C3303	E-6	C4232	G-2	C6210	F-7
R1019	C-10	R3302	F-7	R4211	G-1	R6041	F-8	R6100	C-8	C3016	F-4	C3306	F-6	C4233	G-2	C6211	G-7
R1020	C-10	R3303	E-6	R4212	H-3	R6042	F-8	R6103	G-5	C3018	F-3	C3307	F-6	C4235	C-2	C6213	F-7
R1022	C-10	R3304	E-6	R4213	G-1	R6043	F-8	R6109	H-9	C3019	G-3	C3308	E-6	C4236	E-1	C6214	F-6
R1023	B-10	R3305	F-6	R4214	H-3	R6044	F-8	R6110	H-9	C3020	G-4	C3312	H-4	C4451	G-2	C6216	F-7
R1051	H-5	R3801	B-1	R4215	G-2	R6045	F-8	R6114	C-8	C3021	G-4	C3802	C-1	C4452	G-2	C6217	F-7
R1056	H-5	R3802	B-1	R4216	F-2	R6046	F-8	R6115	F-8	C3022	F-4	C3803	C-1	C4453	G-2	C6222	G-7
R3002	H-4	R3803	C-1	R4217	G-2	R6047	F-8	R6116	F-8	C3025	F-4	C3804	C-1	C4454	G-2	C6223	G-8
R3003	H-4	R3804	C-1	R4218	G-1	R6048	F-8	R6202	D-6	C3026	F-4	C3805	C-1	C4455	G-2	C6228	F-7
R3004	H-2	R3805	B-2	R4219	G-1	R6049	F-8	R6203	D-6	C3027	F-4	C3806	C-1	C4456	G-2	C6230	F-7
R3011	G-4	R3806	C-2	R4220	F-3	R6050	F-8	R6204	E-6	C3029	F-4	C3807	C-1	C4457	F-2	C6302	A-6
R3013	G-5	R3807	B-2	R4221	F-3	R6051	F-8	R6205	D-6	C3035	G-5	C3808	C-1	C4458	G-2	C6304	A-5
R3014	G-5	R3810	B-1	R4222	F-3	R6052	F-7	R6224	F-7	C3036	G-4	C3810	C-2	C4459	G-2	C6310	A-9
R3015	G-5	R3811	B-1	R4224	H-2	R6053	F-7	R6228	G-7	C3039	F-4	C3811	C-2	C4460	F-2	C6316	B-6
R3016	G-5	R3812	B-2	R4225	H-1	R6054	F-7	R6229	G-7	C3041	G-5	C3812	C-2	C4907	E-2	C7005	D-1
R3019	G-4	R3813	B-2	R4227	F-2	R6055	G-8	R6230	G-7	C3042	G-5	C3815	B-2	C4908	F-2	C7007	H-1
R3020	G-4	R3814	B-2	R4451	G-2	R6056	F-7	R6231	F-7	C3043	E-4	C3816	B-1	C4909	F-2	C7010	G-1
R3021	F-4	R3815	B-2	R4452	G-2	R6057	E-8	R6301	A-5	C3044	F-4	C3817	B-1	C4910	F-2	C7011	H-1
R3022	G-3	R3819	B-1	R4453	F-3	R6058	E-8	R6302	A-5	C3045	F-4	C3818	B-1	C4911	F-2	C7018	G-1
R3023	F-3	R3820	B-1	R4454	G-2	R6059	E-8	R6303	A-4	C3046	G-4	C3819	B-1	C4912	G-2	C7020	F-1
R3024	G-4	R3821	B-2	R4455	F-2	R6060	H-9	R6304	A-4	C3047	G-4	C3820	B-1	C4913	E-2	C7023	G-1
R3025	G-4	R3822	B-2	R4456	E-3	R6061	F-6	R6305	A-5	C3048	G-3	C3821	B-1	C4916	F-2	C7024	H-1
R3026	G-4	R3875	H-3	R4901	E-2	R6062	E-8	R6306	A-5	C3049	E-4	C3826	B-1	C4917	E-2	C7027	F-1
R3027	G-5	R4001	F-5	R4902	E-2	R6063	E-8	R6307	A-5	C3050	F-4	C3827	C-1	C4918	F-2	C7029	G-1
R3028	H-5	R4002	G-5	R4903	E-2	R6064	F-8	R6308	A-5	C3052	F-4	C3828	C-2	C4919	F-2	L7005	H-1

8.3. OPERATION I C.B.A. VEPS8052A (A) / VEPS8052B (B)

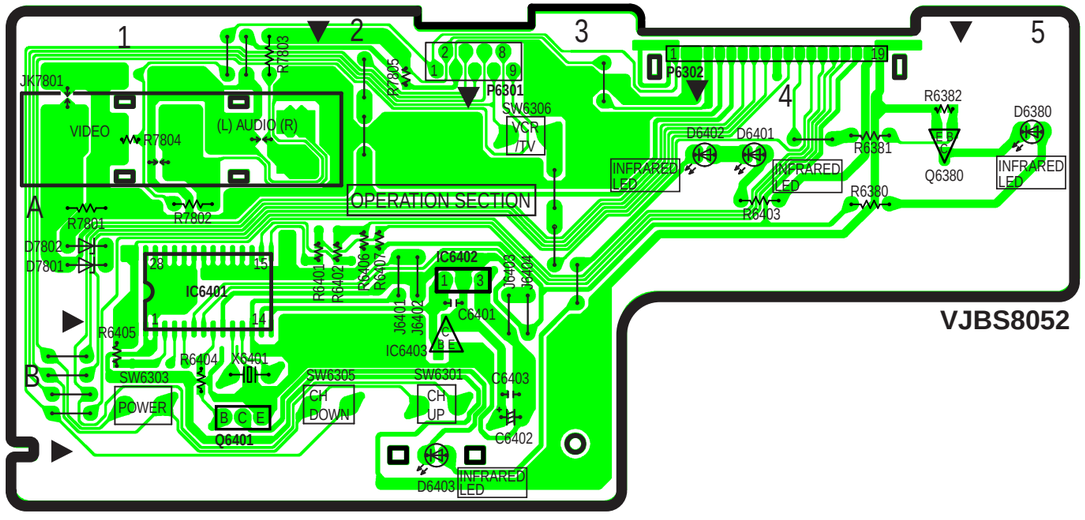
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B



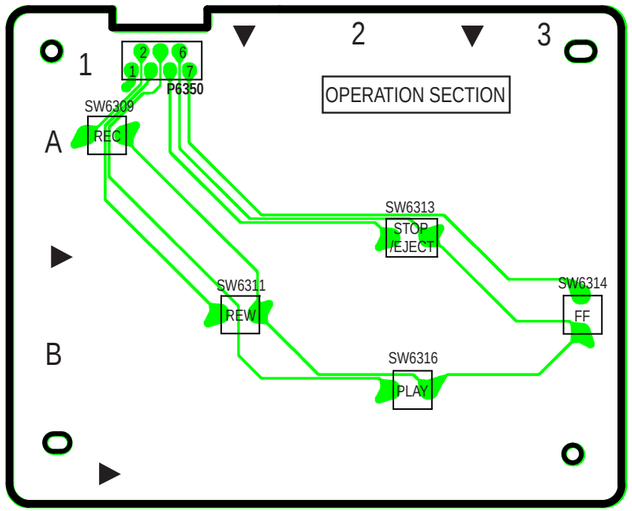
OPERATION	
IC	
IC6401	A-1
IC6402	A-2
IC6403	B-2
TRANSISTOR	
Q6380	A-4
Q6401	B-1
CONNECTOR	
P6301	A-3
P6302	A-3

LEADLESS COMPONENT
PARTS LOCATION GUIDE
OPERATION C.B.A.

R6380	A-4	R6407	A-2
R6381	A-4	R7801	A-1
R6382	A-4	R7802	A-1
R6401	A-2	R7803	A-1
R6402	A-2	R7804	A-1
R6403	A-4	R7805	A-2
R6404	B-1	C6401	A-2
R6405	B-1	C6402	B-2
R6406	A-2	C6403	B-3

8.4. OPERATION II C.B.A. VEPS8053A

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

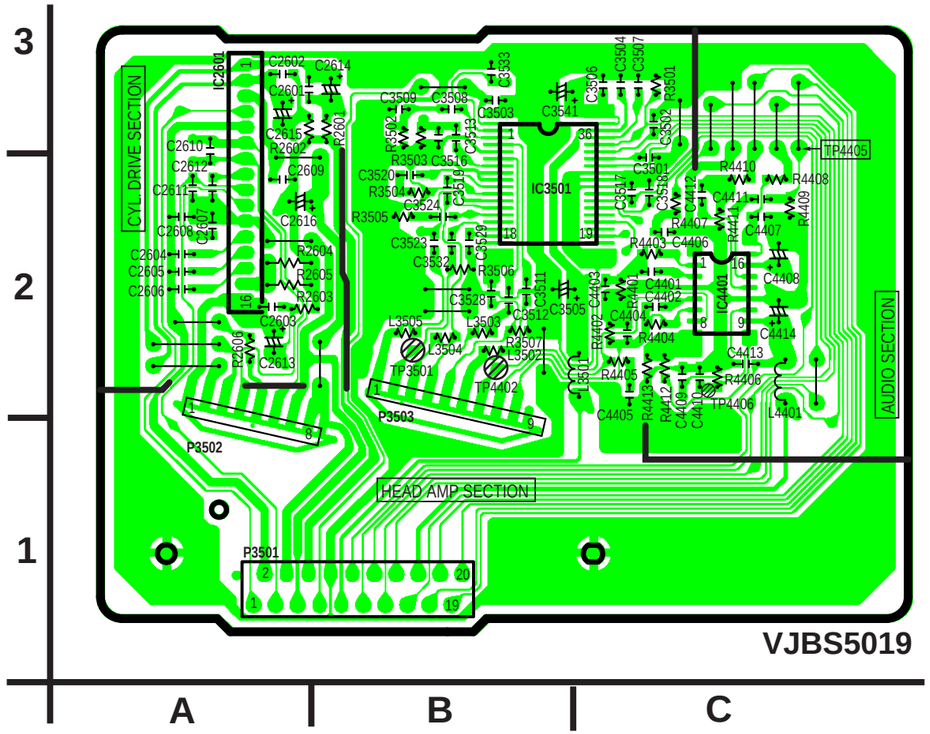


VJBS8053

8.5. Hi-Fi AUDIO / VIDEO HEAD AMP C.B.A. VEPS5019A

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.



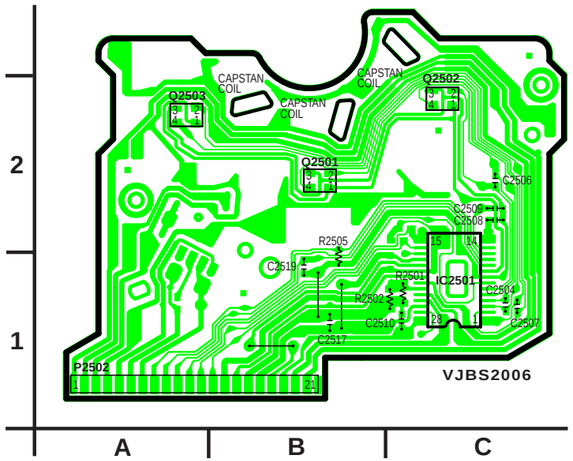
Hi-Fi AUDIO/VIDEO HEAD AMP	
IC	
IC2601	A-3
IC3501	B-2
IC4401	C-2
CONNECTOR	
P3501	A-1
P3502	A-1
P3503	B-1
TEST POINT	
TP3501	B-2
TP4402	B-2
TP4405	C-3
TP4406	C-2

LEADLESS COMPONENT PARTS LOCATION GUIDE
Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.

R2601	B-3	R4409	C-2	C3503	B-3	C3533	B-3
R2602	A-3	R4410	C-2	C3504	C-3	C4401	C-2
R2603	A-2	R4411	C-2	C3506	C-3	C4402	C-2
R2606	A-2	R4412	C-1	C3507	C-3	C4403	C-2
R3501	C-3	R4413	C-1	C3508	B-3	C4404	C-2
R3502	B-3	C2601	A-3	C3509	B-3	C4405	C-2
R3503	B-2	C2602	A-3	C3511	B-2	C4406	C-2
R3504	B-2	C2603	A-2	C3512	B-2	C4407	C-2
R3505	B-2	C2604	A-2	C3513	B-3	C4409	C-1
R3506	B-2	C2605	A-2	C3516	B-2	C4410	C-1
R3507	B-2	C2606	A-2	C3517	C-2	C4411	C-2
R4401	C-2	C2607	A-2	C3518	C-2	C4412	C-2
R4402	C-2	C2608	A-2	C3519	B-2	C4413	C-2
R4403	C-2	C2609	A-2	C3520	B-2	L3502	B-2
R4404	C-2	C2610	A-3	C3523	B-2	L3503	B-2
R4405	C-2	C2611	A-2	C3524	B-2	L3504	B-2
R4406	C-2	C2612	A-2	C3528	B-2	L3505	B-2
R4407	C-2	C3501	C-2	C3529	B-2		
R4408	C-2	C3502	C-3	C3532	B-2		

8.6. CAPSTAN STATOR / JUNCTION C.B.A. / LOADING MOTOR P.C.B. / AUDIO CONTROL HEAD P.C.B.

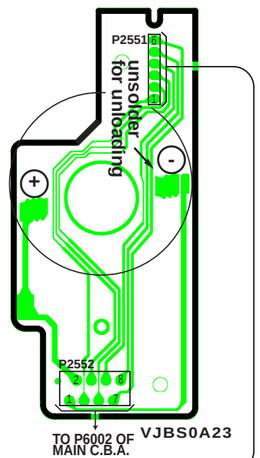
CAPSTAN STATOR UNIT



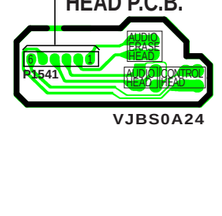
NOTE:
1. CAPSTAN STATOR UNIT IS SUPPLIED AS A CAPSTAN STATOR KIT ONLY. HOWEVER, IC2501(AN3845SC) IS AVAILABLE SEPARATERY AS A REPLACEMENT PART.
2. WHEN INSTALLING THE IC2501 OR CAPSTAN STATOR UNIT, BE SURE TO APPLY SILICON GREASE(VFK1301). REFER TO "CAPSTAN STATOR UNIT" OF "DISASSEMBLY/ASSEMBLY PROCEDURES OF MACHANISM" SECTION.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

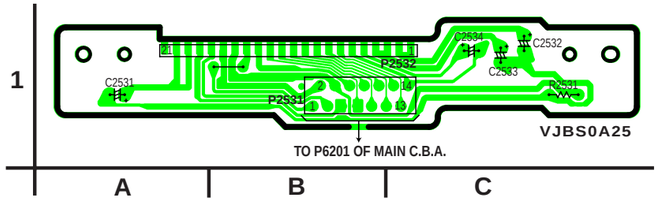
LOADING MOTOR P.C.B.



AUDIO CONTROL HEAD P.C.B.

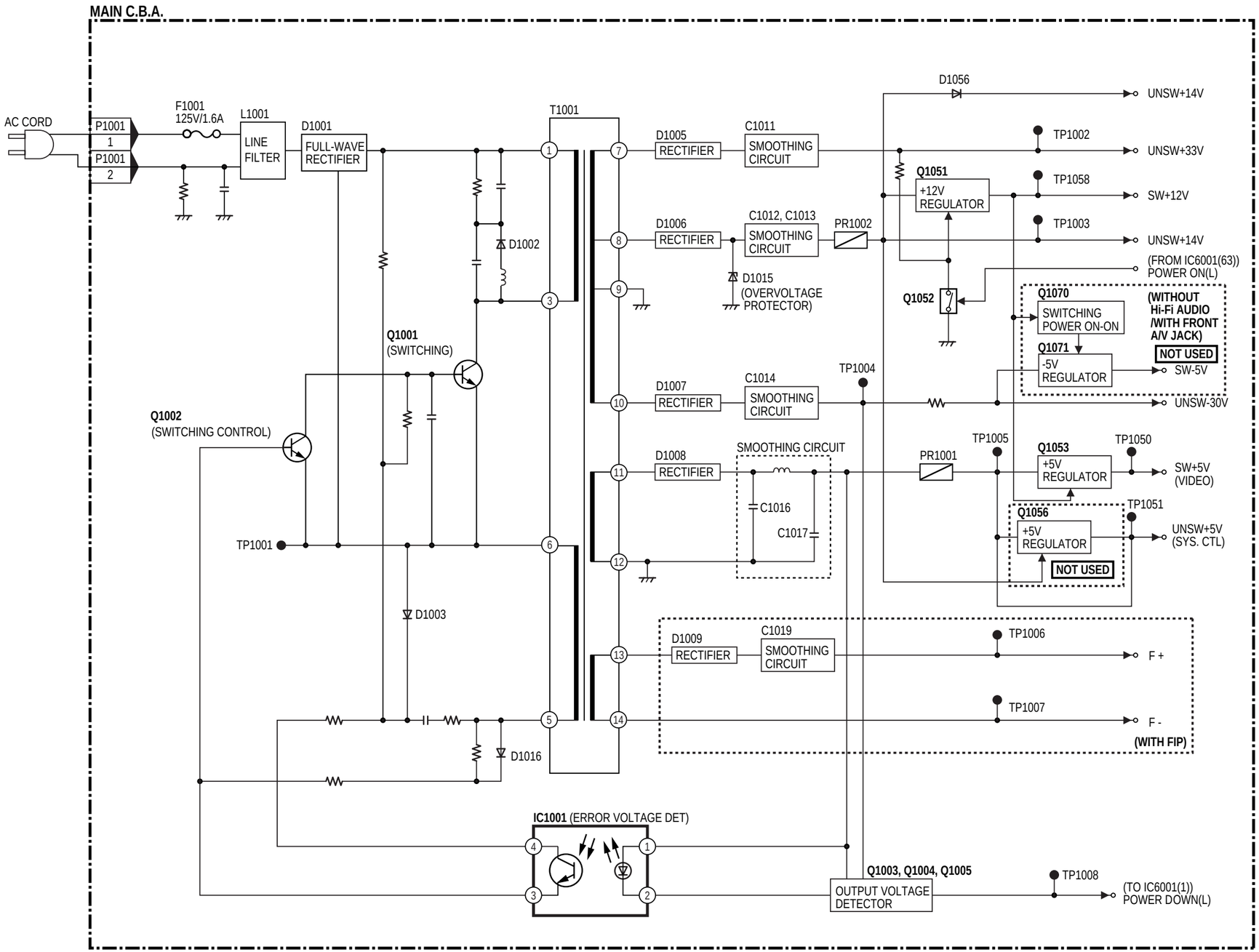


JUNCTION C.B.A. VEPS0A25A

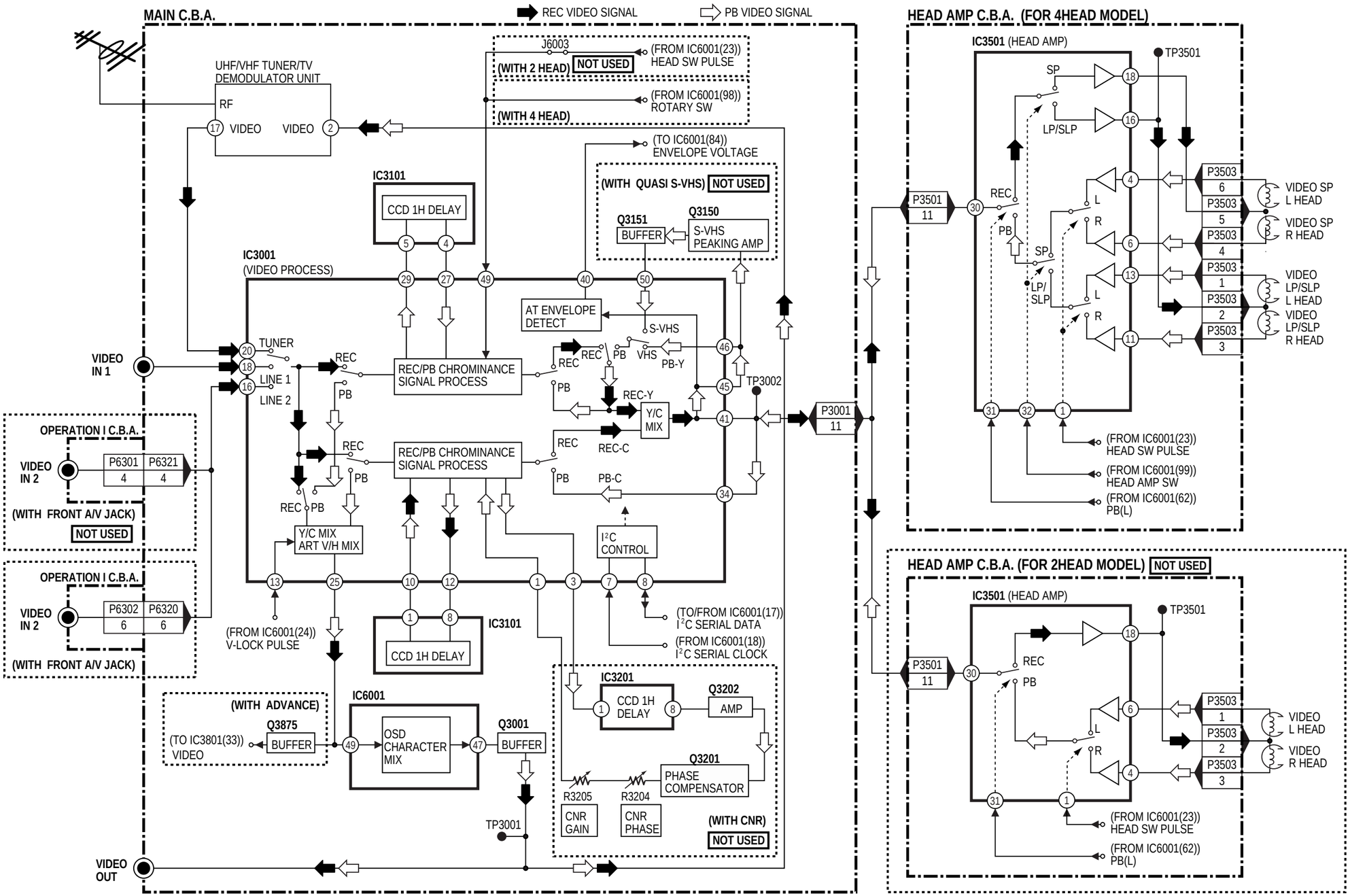


9 BLOCK DIAGRAMS

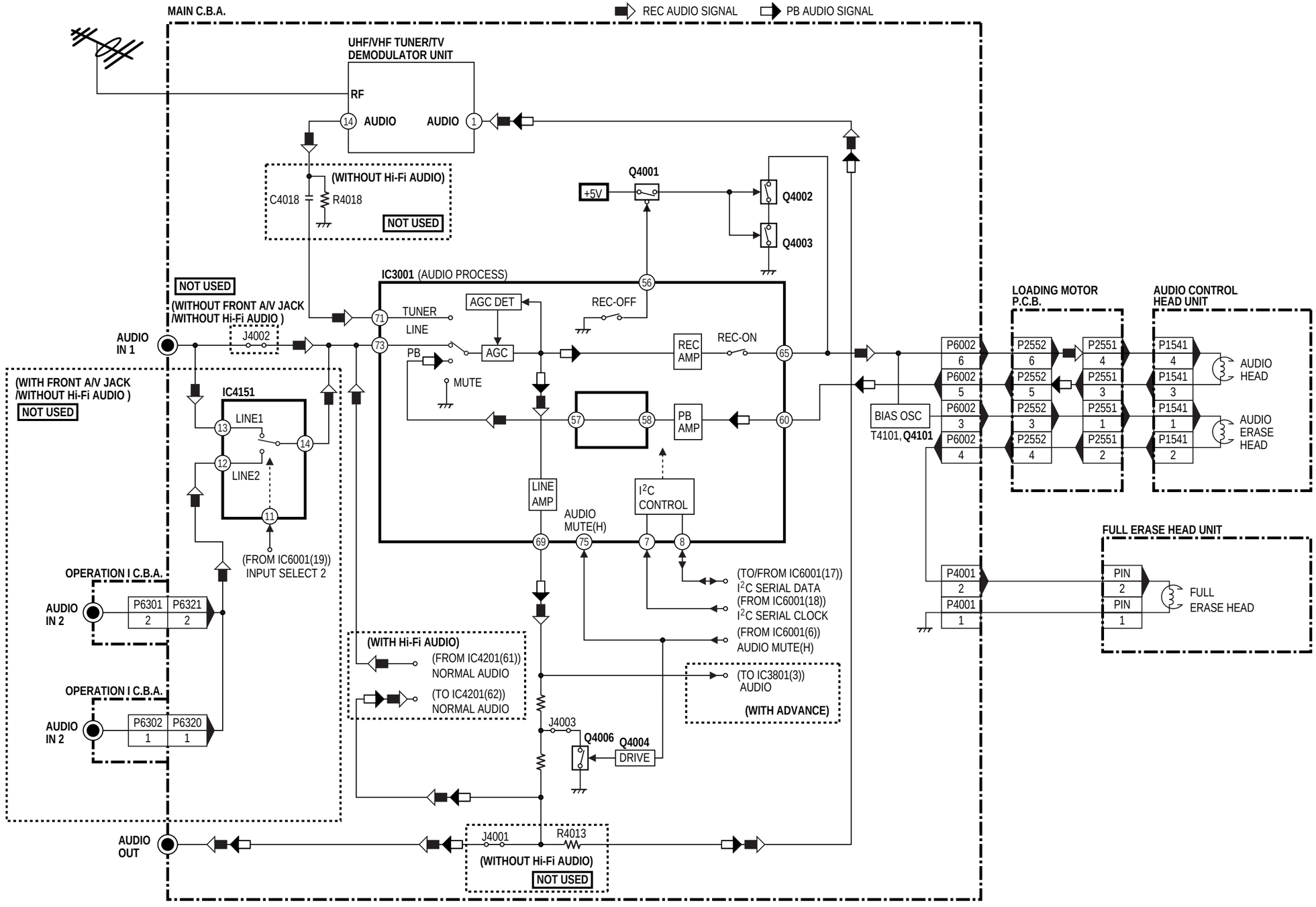
9.1. POWER SUPPLY BLOCK DIAGRAM



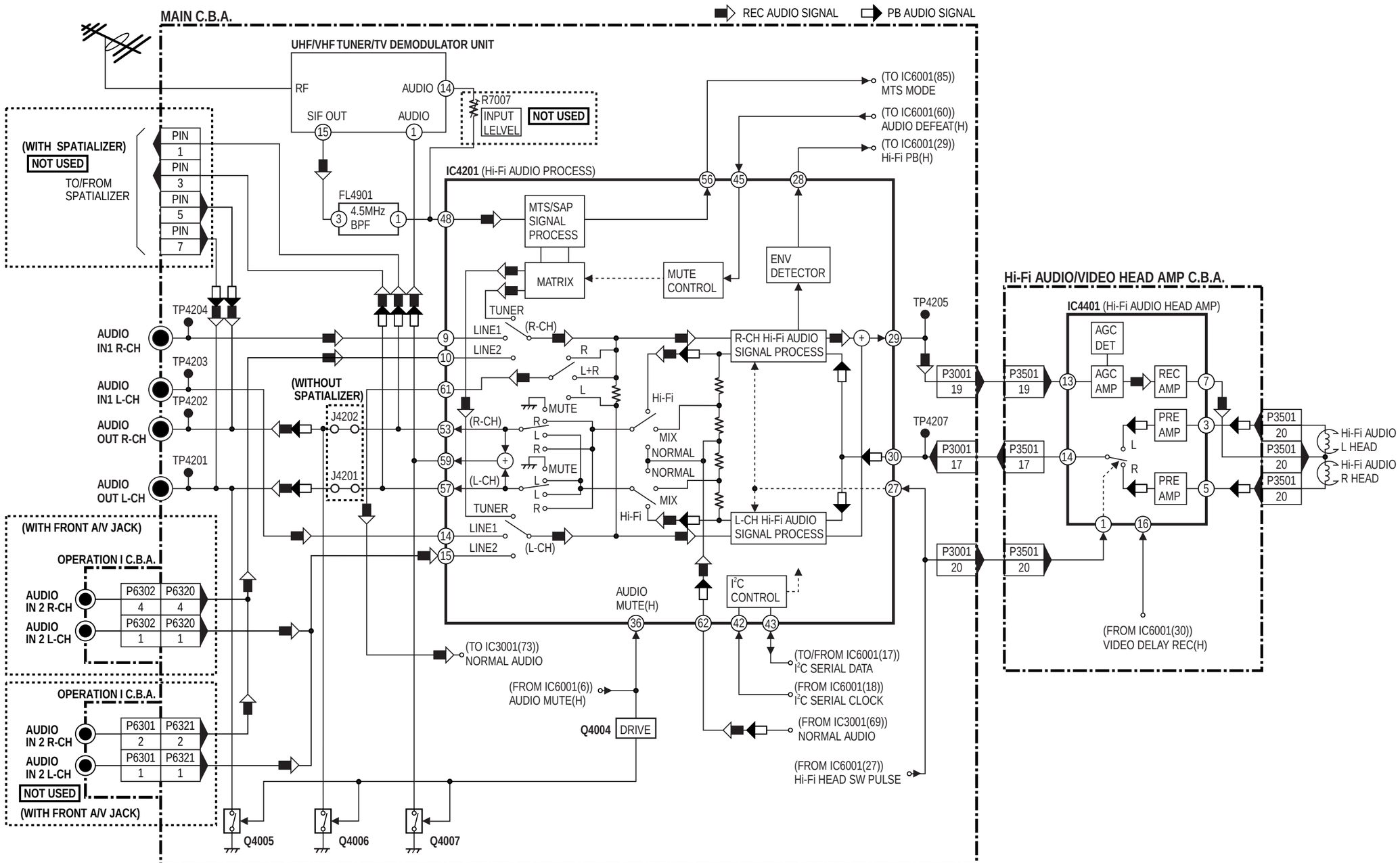
9.2. VIDEO SIGNAL PATH BLOCK DIAGRAM



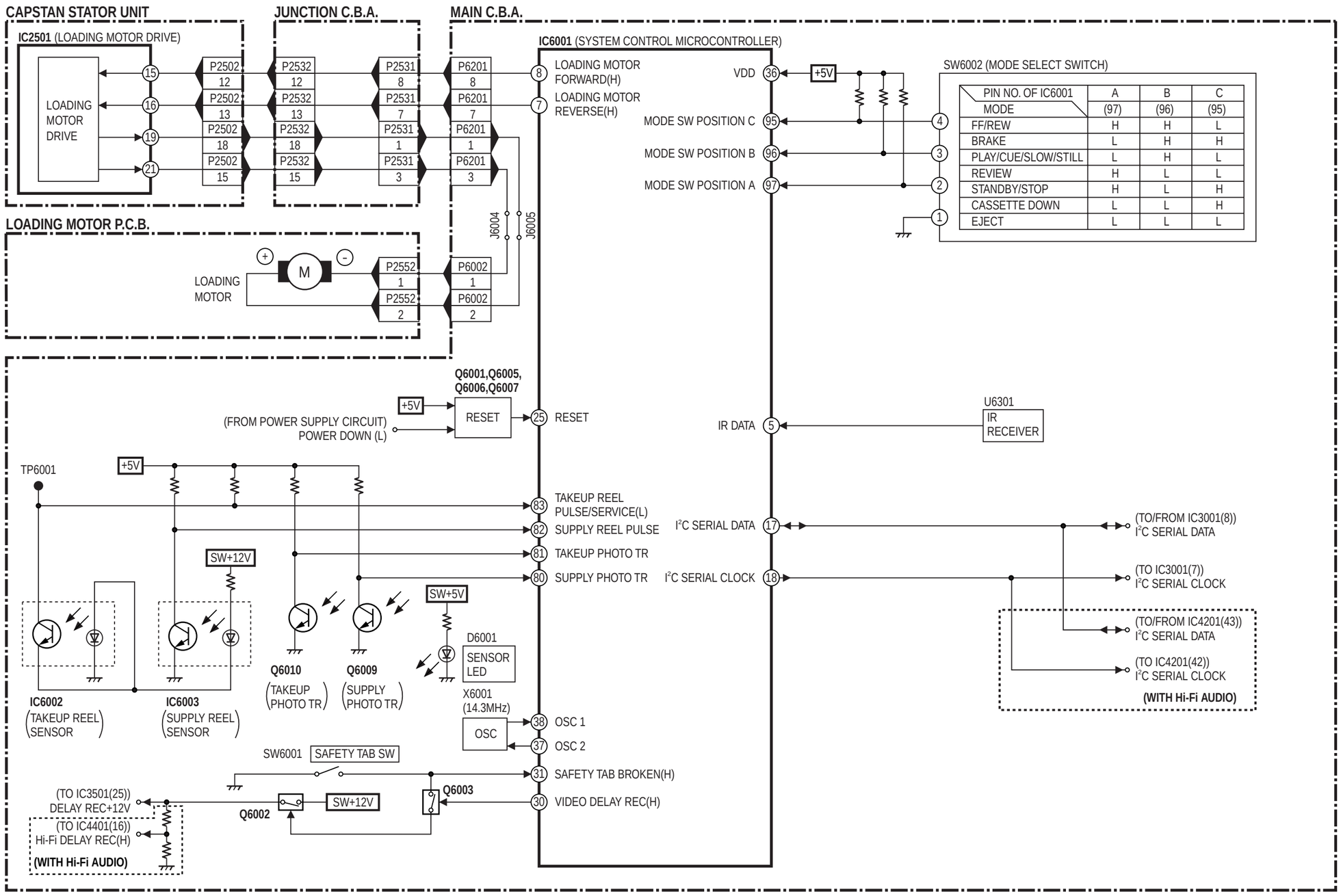
9.3. AUDIO SIGNAL PATH BLOCK DIAGRAM



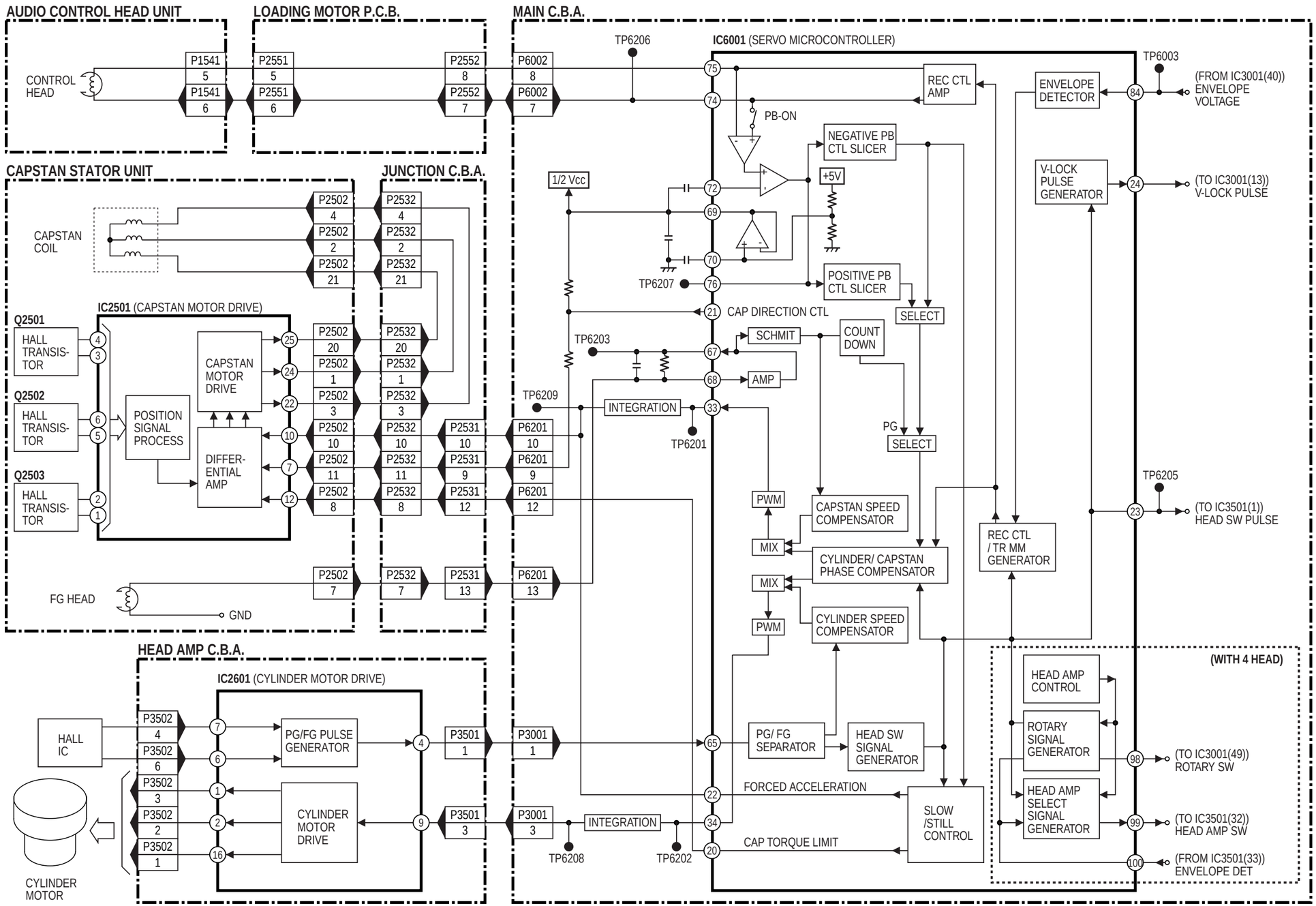
9.4. Hi-Fi AUDIO SIGNAL PATH BLOCK DIAGRAM



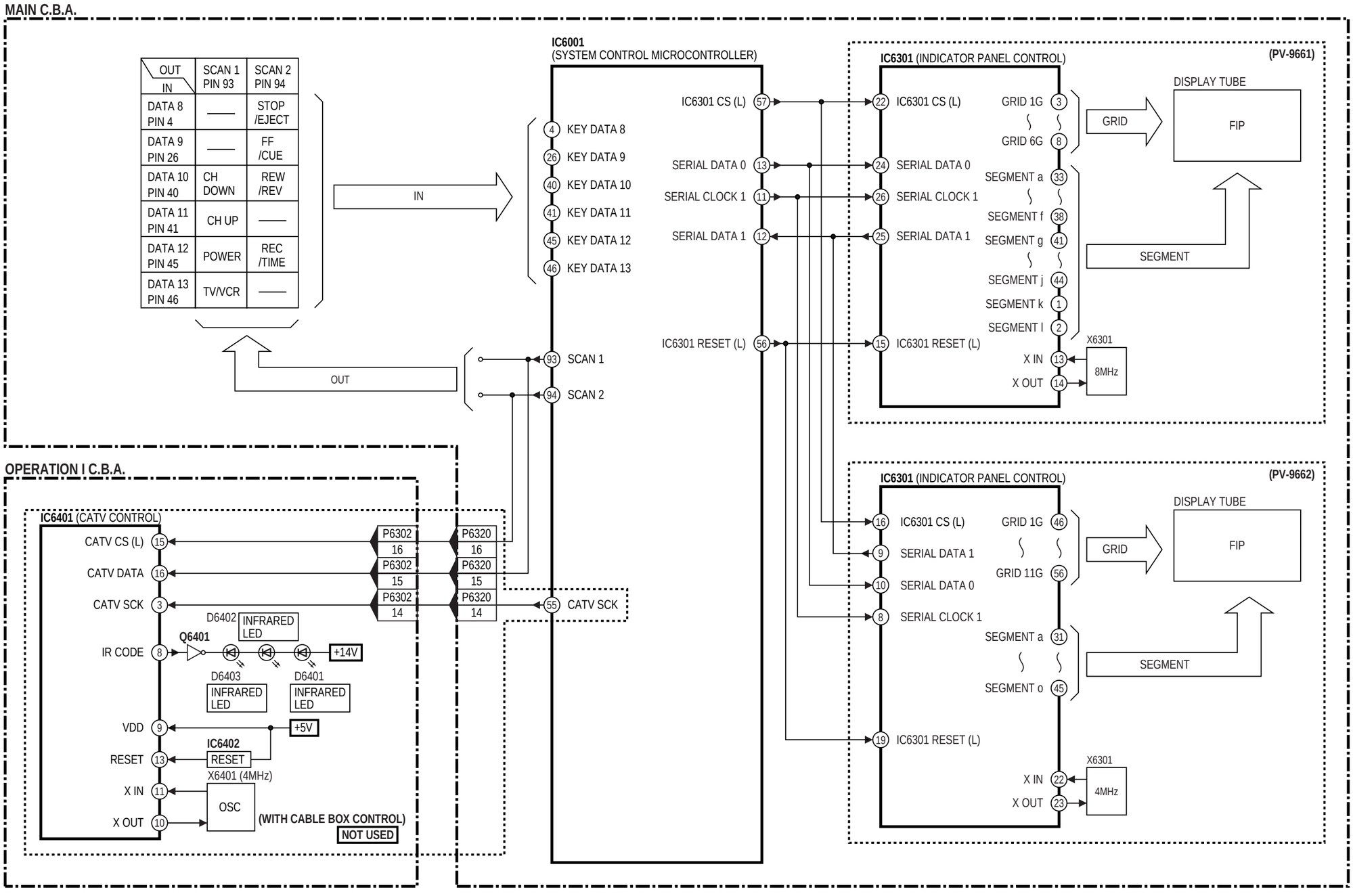
9.5. SYSTEM CONTROL BLOCK DIAGRAM



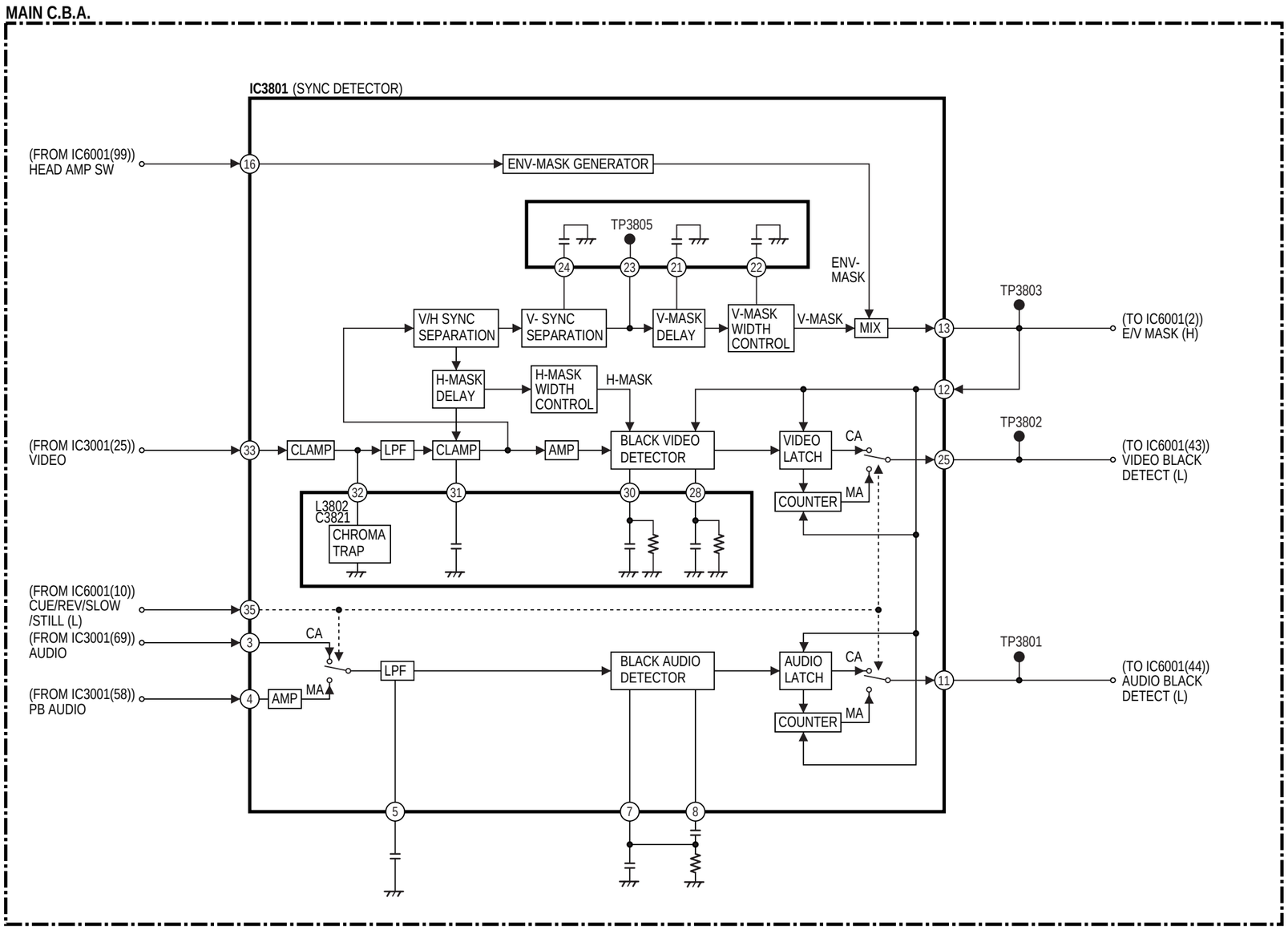
9.6. SERVO BLOCK DIAGRAM



9.7. OPERATION BLOCK DIAGRAM



9.8. ADVANCE BLOCK DIAGRAM

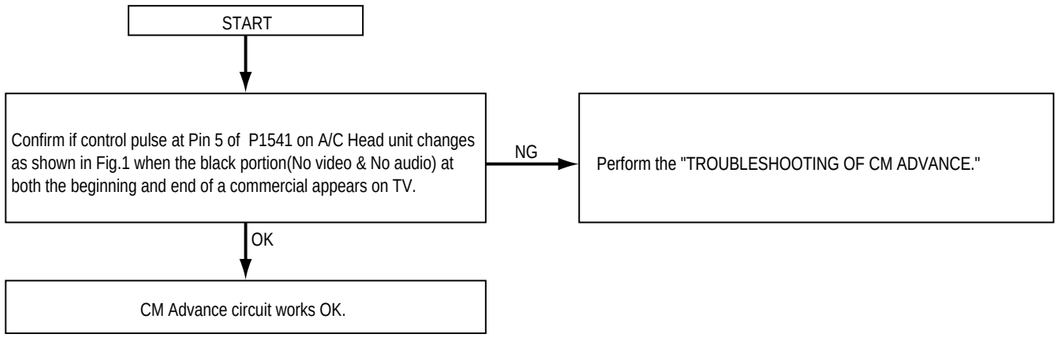


9.9. TROUBLESHOOTING HINTS

CM Advance Section

HOW TO CONFIRM IF CM ADVANCE CIRCUIT IS WORKING.

Record any broadcast including commercial over 30 seconds. Then, as recording continues, proceed with all troubleshooting of CM Advance Circuit.


START
Confirm if control pulse at Pin 5 of P1541 on A/C Head unit changes as shown in Fig.1 when the black portion(No video & No audio) at both the beginning and end of a commercial appears on TV.
NG
Perform the "TROUBLESHOOTING OF CM ADVANCE."
OK
CM Advance circuit works OK.

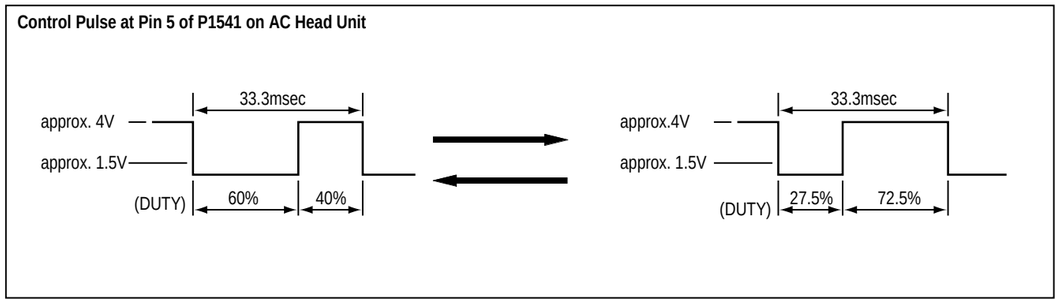
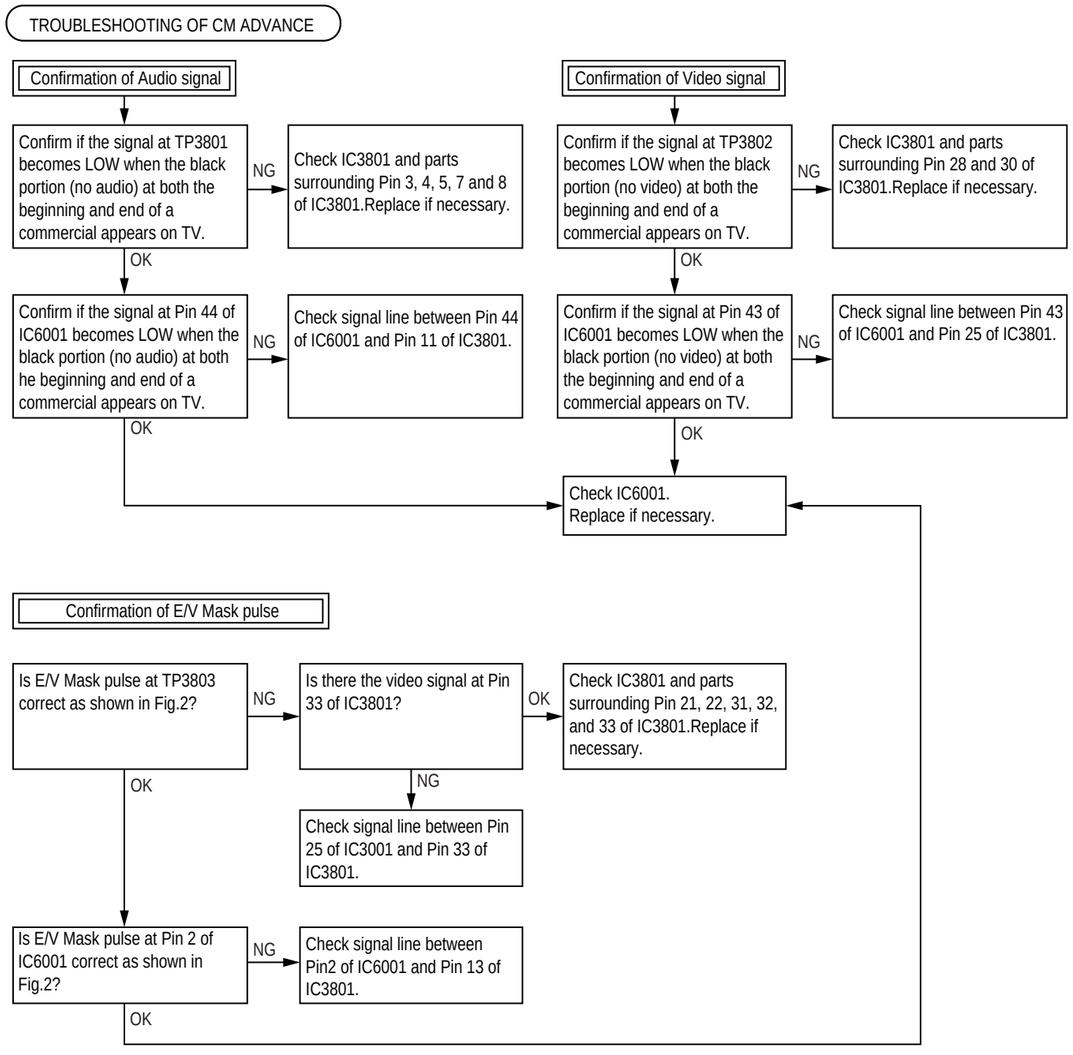


Fig.1


TROUBLESHOOTING OF CM ADVANCE
Confirmation of Audio signal
Confirm if the signal at TP3801 becomes LOW when the black portion (no audio) at both the beginning and end of a commercial appears on TV.
NG
Check IC3801 and parts surrounding Pin 3, 4, 5, 7 and 8 of IC3801.Replace if necessary.
OK
Confirm if the signal at Pin 44 of IC6001 becomes LOW when the black portion (no audio) at both he beginning and end of a commercial appears on TV.
NG
Check signal line between Pin 44 of IC6001 and Pin 11 of IC3801.
OK
Confirmation of Video signal
Confirm if the signal at TP3802 becomes LOW when the black portion (no video) at both the beginning and end of a commercial appears on TV.
NG
Check IC3801 and parts surrounding Pin 28 and 30 of IC3801.Replace if necessary.
OK
Confirm if the signal at Pin 43 of IC6001 becomes LOW when the black portion (no video) at both the beginning and end of a commercial appears on TV.
NG
Check signal line between Pin 43 of IC6001 and Pin 25 of IC3801.
OK
Check IC6001.
Replace if necessary.
Confirmation of E/V Mask pulse
Is E/V Mask pulse at TP3803 correct as shown in Fig.2?
NG
Is there the video signal at Pin 33 of IC3801?
OK
Check IC3801 and parts surrounding Pin 21, 22, 31, 32, and 33 of IC3801.Replace if necessary.
NG
Check signal line between Pin 25 of IC3001 and Pin 33 of IC3801.
OK
Is E/V Mask pulse at Pin 2 of IC6001 correct as shown in Fig.2?
NG
Check signal line between Pin2 of IC6001 and Pin 13 of IC3801.
OK

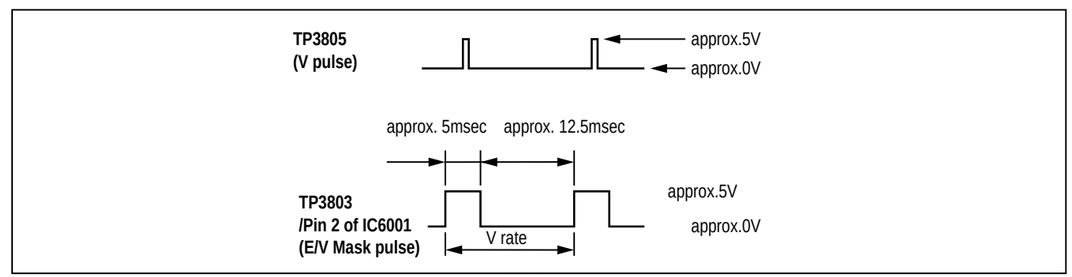
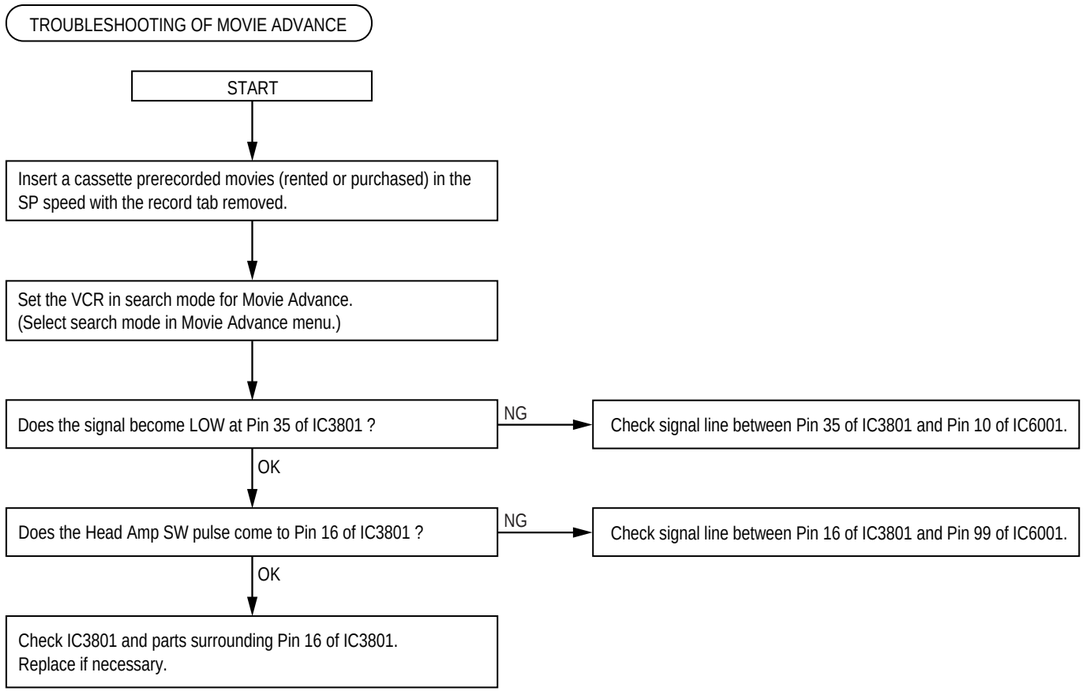


Fig.2

Movie Advance Section

Confirm if CM Advance Circuit works as shown in "HOW TO CONFIRM IF CM ADVANCE CIRCUIT IS WORKING." before performing "TROUBLESHOOTING OF MOVIE ADVANCE."
If NG, perform the "TROUBLESHOOTING OF CM ADVANCE." first.
If OK, perform following steps.

HOW TO CONFIRM IF MOVIE ADVANCE CIRCUIT IS WORKING.


TROUBLESHOOTING OF MOVIE ADVANCE
START
Insert a cassette prerecorded movies (rented or purchased) in the SP speed with the record tab removed.
Set the VCR in search mode for Movie Advance. (Select search mode in Movie Advance menu.)
Does the signal become LOW at Pin 35 of IC3801 ?
NG
Check signal line between Pin 35 of IC3801 and Pin 10 of IC6001.
OK
Does the Head Amp SW pulse come to Pin 16 of IC3801 ?
NG
Check signal line between Pin 16 of IC3801 and Pin 99 of IC6001.
OK
Check IC3801 and parts surrounding Pin 16 of IC3801. Replace if necessary.

10 EXPLODED VIEWS

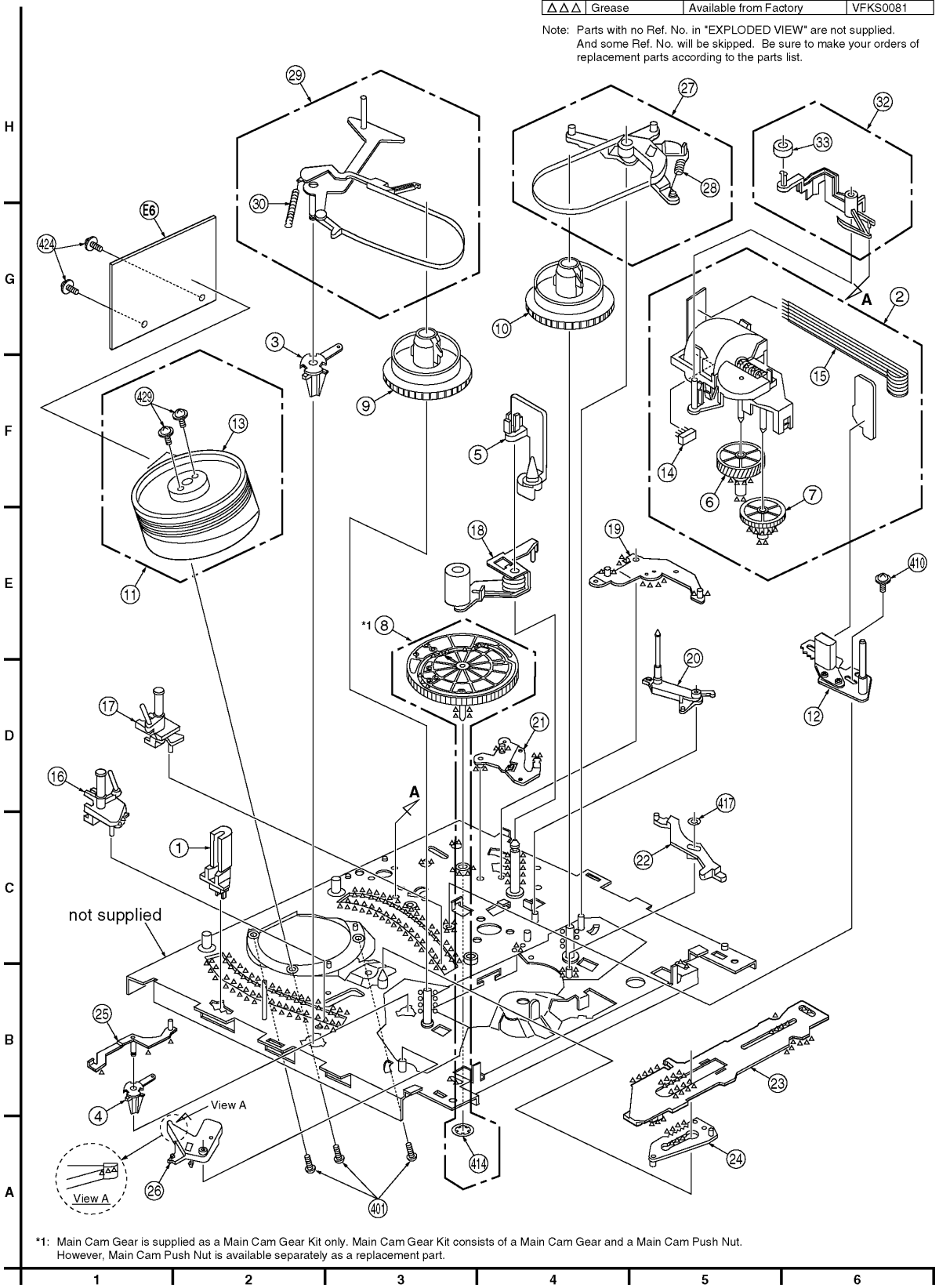
10.1. MECHANISM (TOP) SECTION

❶ MECHANISM (TOP) SECTION

LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
×××	Silicon Grease	Available from Factory	VFK1301
○○○	Spindle Oil	Purchase from Local Supplier	- - - - - - - -
△△△	Grease	Available from Factory	VFKS0081

Note: Parts with no Ref. No. in "EXPLODED VIEW" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.



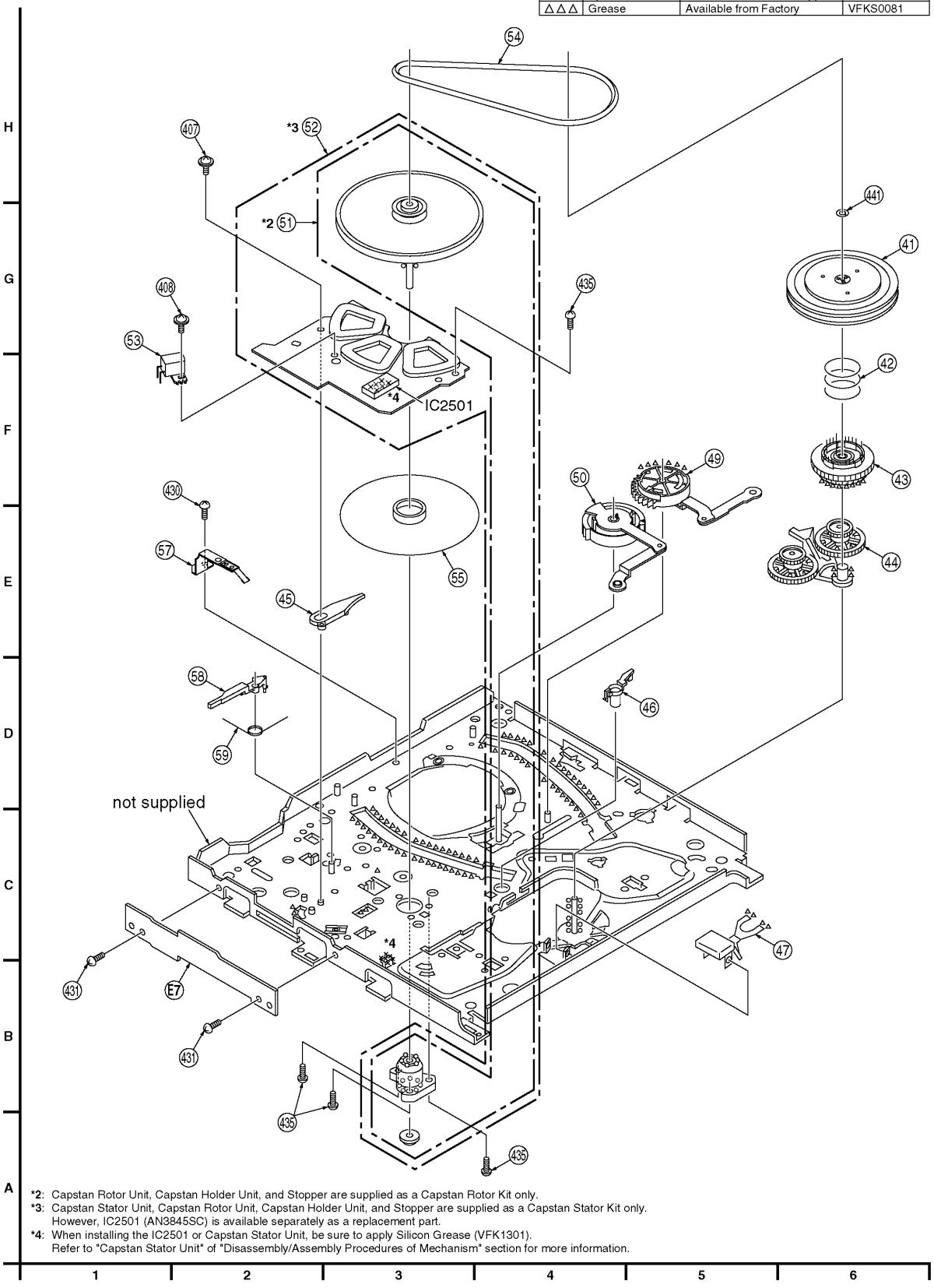
*1: Main Cam Gear is supplied as a Main Cam Gear Kit only. Main Cam Gear Kit consists of a Main Cam Gear and a Main Cam Push Nut. However, Main Cam Push Nut is available separately as a replacement part.

10.2. MECHANISM (BOTTOM) SECTION

❷ MECHANISM (BOTTOM) SECTION

LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
✕✕✕	Silicon Grease	Available from Factory	VFK1301
○○○	Spindle Oil	Purchase from Local Supplier	- - - - - - - -
△△△	Grease	Available from Factory	VFKS0081



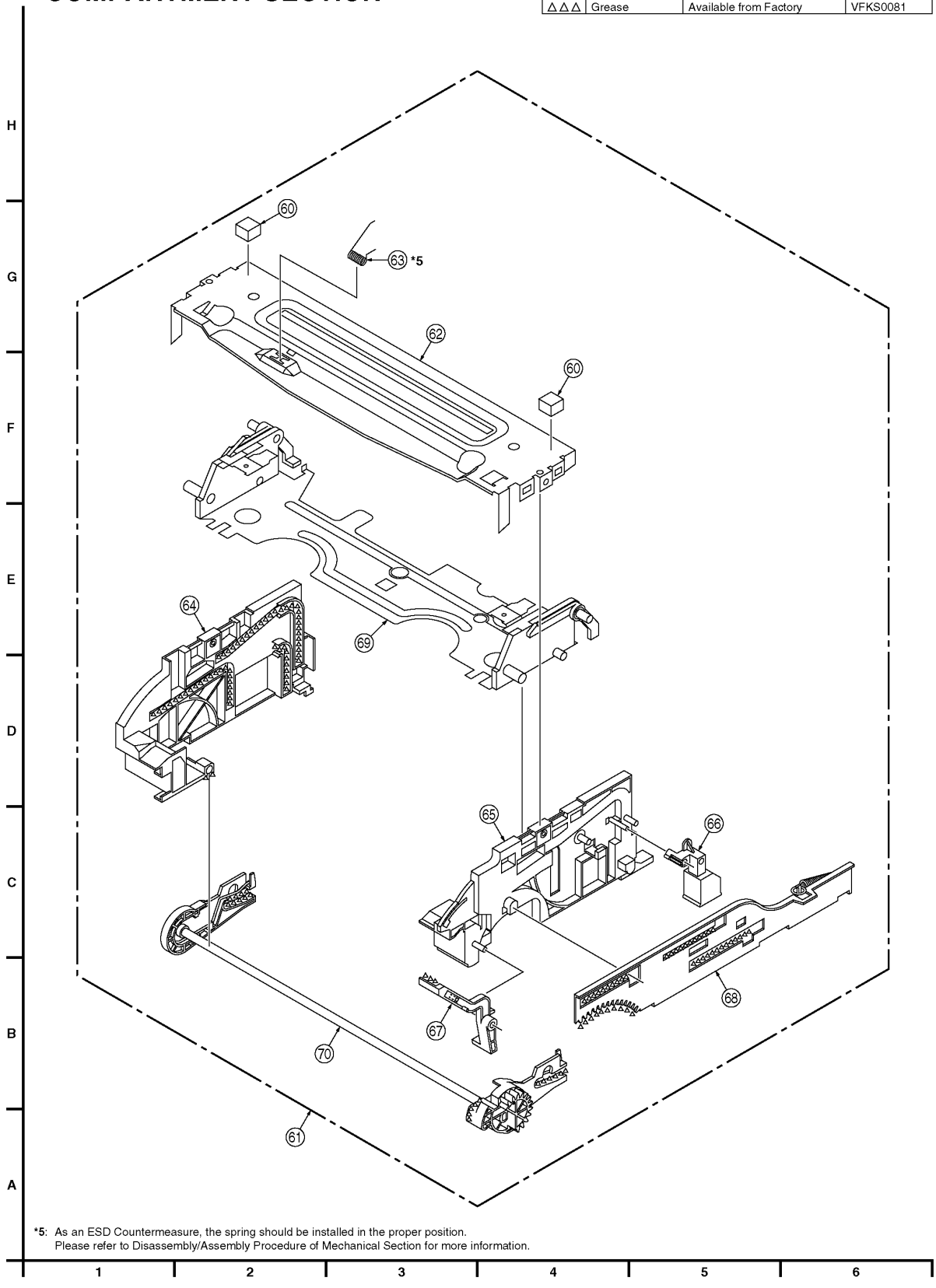
*2: Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Rotor Kit only.
*3: Capstan Stator Unit, Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Stator Kit only. However, IC2501 (AN3845SC) is available separately as a replacement part.
*4: When installing the IC2501 or Capstan Stator Unit, be sure to apply Silicon Grease (VFK1301). Refer to "Capstan Stator Unit" of "Disassembly/Assembly Procedures of Mechanism" section for more information.

10.3. CASSETTE UP COMPARTMENT SECTION

LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

Mark	Kind of Lubricant	Availability	Part Number
×××	Silicon Grease	Available from Factory	VFK1301
○○○	Spindle Oil	Purchase from Local Supplier	- - - - - - - -
△△△	Grease	Available from Factory	VFKS0081

❸ CASSETTE UP COMPARTMENT SECTION

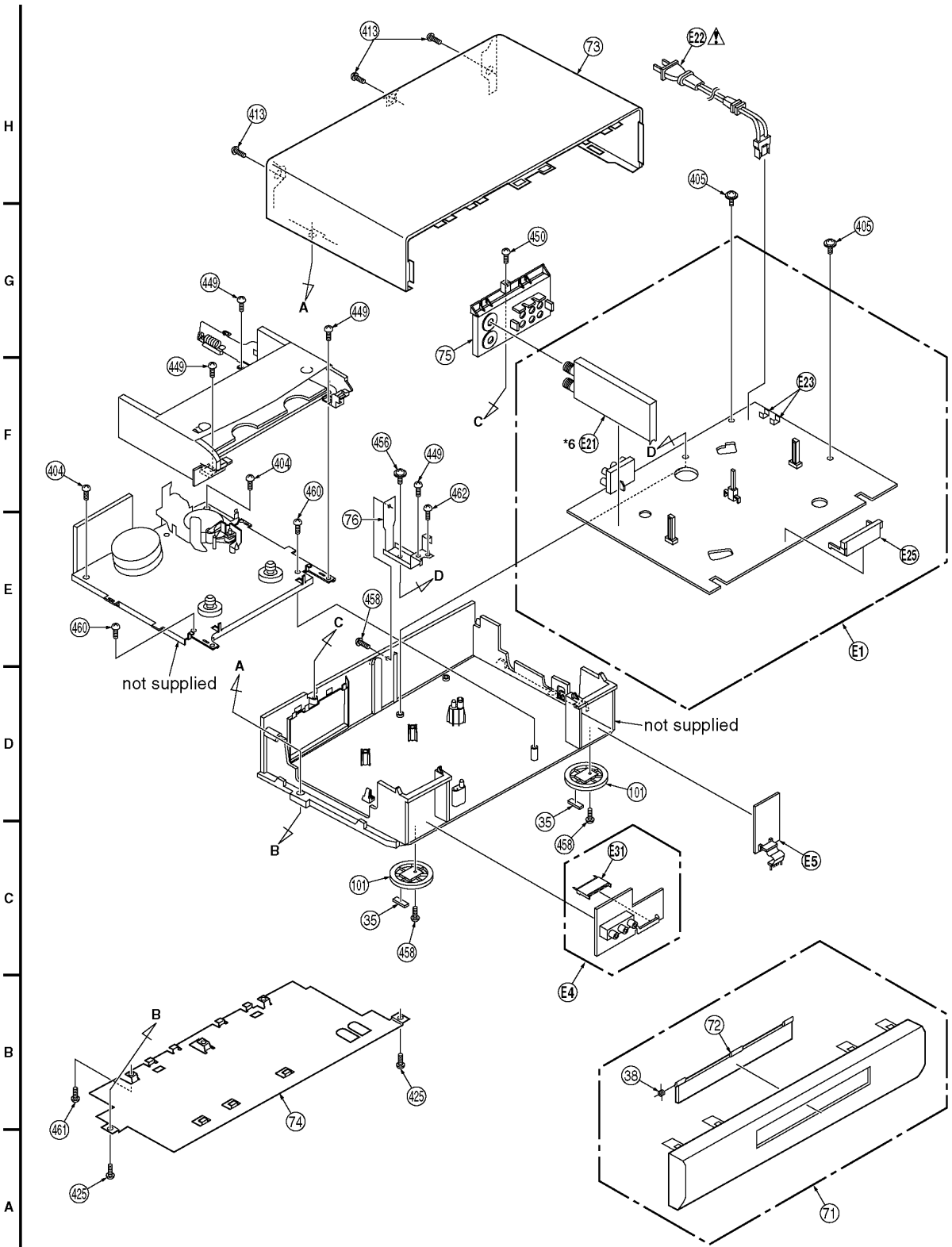


*5: As an ESD Countermeasure, the spring should be installed in the proper position.
Please refer to Disassembly/Assembly Procedure of Mechanical Section for more information.

10.4. CHASSIS FRAME AND CASING PARTS SECTION

IMPORTANT SAFETY NOTICE
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

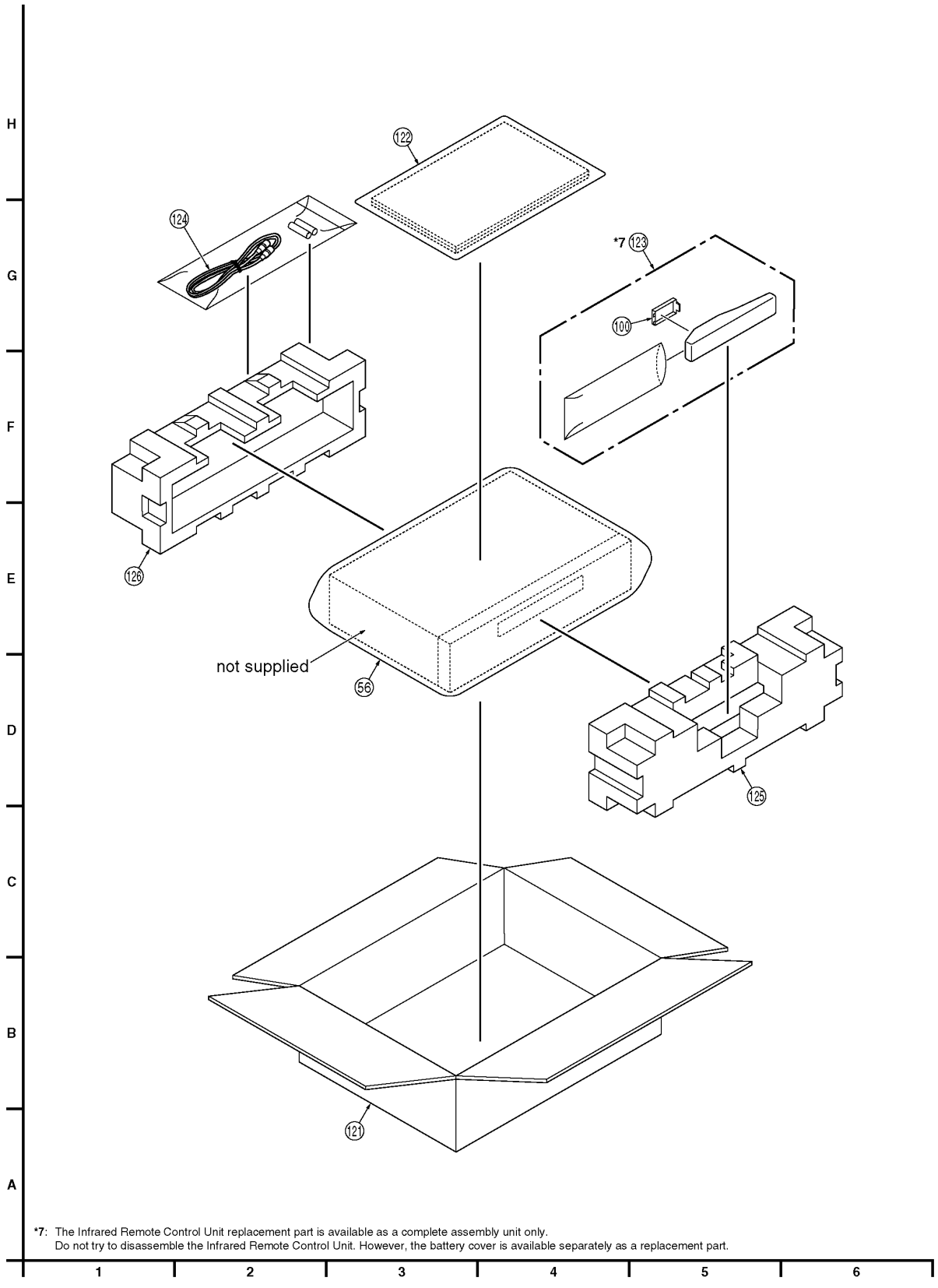
❹ CHASSIS FRAME AND CASING PARTS SECTION



*6: Since the UHF/VHF TUNER/TV DEMODULATOR UNIT has already been pre-adjusted at the factory, do not try to adjust the UHF/VHF TUNER/TV DEMODULATOR UNIT. The UHF/VHF TUNER/TV DEMODULATOR UNIT replacement part is available as a complete assembly unit only.

10.5. PACKING PARTS AND ACCESSORIES SECTION

❺ PACKING PARTS AND ACCESSORIES SECTION



*7: The Infrared Remote Control Unit replacement part is available as a complete assembly unit only.
Do not try to disassemble the Infrared Remote Control Unit. However, the battery cover is available separately as a replacement part.

11 REPLACEMENT PARTS LIST

BEFORE REPLACING PARTS, READ THE FOLLOWING:

11.1. REPLACEMENT NOTES

11.1.1. General Notes

1. Use only original replacement parts:

   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list.

2. **IMPORTANT SAFETY NOTICE**

   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components, use only the specified parts.

3. SPECIAL NOTE

   All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.

4. Parts with no Ref. No. in "EXPLODED VIEW" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.

5. Parts different in shape or size may be used. However, only interchangeable parts will be supplied as service replacement parts.

6. The parts which "MKA" is indicated in Remarks column will be supplied from MKA factory.

11.1.2. Mechanical Replacement Notes

1. Section No. of parts shown in Exploded Views are indicated in the Remarks column.

2. Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as Capstan Rotor Kit (Ref. No. 51) only.

3. Capstan Stator Unit, Capstan Rotor Unit, Capstan Holder Unit, and Stopper are supplied as a Capstan Stator Kit (Ref. No. 52) only. However, IC2501 (AN3845SC) is available separately as a replacement part. When installing the IC2501 or Capstan Stator unit, be sure to apply Silicon Grease (VFK1301). Refer to "Capstan Stator Unit" of "DISASSEMBLY/ASSEMBLY PROCEDURES OF MECHANISM" section.

4. Main Cam Gear is supplied as a Main Cam Gear Kit only. Main Cam Gear Kit consists of a Main Cam Gear and a Main Cam Push Nut. However, Main Cam Push Nut is available separately as a replacement part.

5. Since the UHF/VHF TUNER/TV DEMODULATOR UNIT (Ref. No. E21) has already been pre-adjusted at the factory, do not try to adjust the UHF/VHF TUNER/TV DEMODULATOR UNIT. The UHF/VHF TUNER/TV DEMODULATOR UNIT replacement part is available as a complete assembly unit only.

6. The Infrared Remote Control Unit (Ref. No. 123) replacement part is available as a complete assembly unit only. Do not try to disassemble the Infrared Remote Control Unit. However, the battery cover is available separately as a replacement part.

7. Cut Washers (Ref. No. 417 and 441) are not reusable.

   If removed, install a new one.

8. Main Cam Push Nut (Ref. No. 414) is not reusable.

   If removed, install a new one.

11.1.3. Electrical Replacement Notes

1. Item numbers with capital letter E (Example: E1, E2,...) in the Ref. No. column are shown in the exploded views.

2. The parts with "■" mark are supplied individually or as a unit. The parts with "▲" mark are supplied individually or as a unit, and are included in "■" parts listed directly above in the parts list.

3. Unless otherwise specified;

   All resistors are in ohms, 1/4W, +/-5%, carbon, K = 1,000 ohm, M = 1,000 kohm.

   All capacitors are in microfarads, P = micromicrofarad, +/-10%.

   All coils are in microhenries, M = 1,000 microhenry, +/-10%.

4. Abbreviation

   RTL: Retention Time Limited

   This indicates that the retention time is limited for this item. After the discontinuation of this item in production, it will no longer be available.

   NR: Non Repairable Board Ass'y

   MGF CHIP: Metal Glaze Film Chip

   C CHIP: Ceramic Chip

   COMPLX CMP: Complex Component

   W FLMPRF: Wirewound Flameproof

   C.B.A.: Circuit Board Assembly

   P.C.B.: Printed Circuit Board

   E.S.D.: Electrostatically Sensitive Devices

5. SERVICE OF CHIP PARTS

   When servicing chip parts, please use a soldering iron of less than 30 watts. Refer to "IC, TRANSISTOR AND CHIP PART INFORMATION" page.

6. The parts with "●" are 0 ohm resistor. When replacing, a wire can be substituted for a 0 ohm resistor.

7. IC6301 replacement note:

   The manufacturing part number is TMP47C216FF917. However, to order the part, use service order part number T47C216FF917.

COMPARISON CHART MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B

11.2. MECHANICAL REPLACEMENT PARTS LIST

MECHANISM PARTS ON CHASSIS

Ref. No.	Part No.	Part Name & Description	Remarks
			(Section No.)
1	VBSS0033	FULL ERASE HEAD	1
2	VXKS0867	MOTOR BLOCK ASS'Y	1
	OR VXKS0876		
3	VDBS0349	TENSION ARM BOSS	1
4	VDBS0351	S BRAKE ARM BOSS	1
5	VMDS0971	OPENER PIECE	1
6	VDGS0428	WORM WHEEL GEAR	1
7	VDGS0429	INTERMEDIATE GEAR	1
8	VVGS0008	MAIN CAM GEAR KIT	1
9	VDRS0056	S REEL TABLE	1
10	VDRS0057	T REEL TABLE	1
11	VEGS0408	CYLINDER UNIT	1
12	VEHS0569	AUDIO CONTROL/ERASE HEAD UNIT	1
13	VEHS0567	UPPER CYLINDER UNIT	1
14	VJSS0882	CONNECTOR 8P	1
15	VJWS6LB100LL	COMMU CABLE W/OUT PLUG	1
16	VXDS0198	LOADING POST BASE-S UNIT	1
17	VXDS0195	LOADING POST BASE-T UNIT	1
18	VXLS1078	PINCH ARM UNIT	1
19	VMLS0978	MAIN LEVER DRIVE ARM	1
20	VXLS1063	P5 ARM UNIT	1
21	VMLS0976	DRIVE RACK ARM	1
22	VMLS0972	CHANGING LEVER A	1
23	VMLS0977	MAIN LEVER	1
24	VXLS1072	LOADING RACK UNIT	1
25	VXLS1061	S BRAKE ARM UNIT	1
26	VMLS0982	S SPRING ARM	1
27	VXLS1062	T BRAKE UNIT	1
28	VMBS1150	T BRAKE SPRING	1
29	VXLS1074	TENSION ARM UNIT	1
30	VMBS1164	TENSION SPRING	1
32	VXLS1080	CLEANER ARM UNIT	1
33	VDPS0269	CLEANER ROLLER	1
35	VKAS0047	RUBBER FOOT	4
38	VMBS1161	CASSETTE DOOR SPRING	4
41	VXPS0379	CENTER CLUTCH UNIT	2
42	VMBS1151	CHANGING GEAR SPRING	2
43	VDGS0425	CHANGING GEAR	2
44	VXLS1053	IDLER ARM UNIT	2
45	VMDS0985	PCB HOLDER	2
46	VMDS0982	MAIN LEVER GUIDE	2
47	VMLS0973	CHANGING LEVER B	2
49	VXLS1054	S LOADING ARM UNIT	2
50	VXLS1056	T LOADING ARM UNIT	2
51	VXPS0382K2	CAPSTAN ROTOR KIT	2
52	VEMS0316K2	CAPSTAN STATOR KIT	2
53	VBKS0040	FG HEAD	2
54	VDVS0087	CAPSTAN BELT SQUARE,ELASTOMER 2MM	2
55	VMAS2135	SUB ROTOR	2
56	VPFS0085	SHEET,POLYETHYLENE	5
57	VXBS0061	GROUNDING PLATE UNIT	2
58	VXLS1070	SS BRAKE ARM UNIT	2
59	VMBS1155	SS BRAKE SPRING	2
60	VMFS0311	CUSHION	3
61	VXYS1263	CASSETTE UP ASS'Y	3
62	VMAS2131	TOP PLATE	3
63	VMBS1159	GROUNDING SPRING	3
64	VMDS0990	SIDE PLATE L	3
65	VMDS0974	SIDE PLATE R	3
66	VMDS0979	SENSOR COVER	3
67	VMLS0993	OPENER LEVER	3
68	VXLS1064	DRIVE RACK UNIT	3
69	VXAS4404	HOLDER UNIT	3
70	VXLS1065	WIPER ARM UNIT	3
71		FRONT PANEL ASS'Y	
	VYPS7000	(A)	4
	VYPS7001	(B)	4
72		CASSETTE DOOR-LID UNIT	
	VYPS6912	(A)	4
	VYPS6920	(B)	4
73	VKMS2388	TOP COVER	4
74	VKUS0272	BOTTOM PANEL	4
75	VGPS4341	REAR PANEL	4
76	VMAS2136	CHASSIS ANGLE	4
100	VKFS2235	BATTERY COVER	5
101	VKAS0062	FOOT	4
121		PACKING CASE,PAPER	
	VPGS4407	(A)	5
	VPGS4408	(B)	5
122		FAN BAG	
	VQFS3517	(A)	5
	VQFS3518	(B)	5
123		INFRARED REMOTE CONTROL UNIT	
	VSQS1596	(A)	5
	VSQS1598	(B)	5
124	VJAS0212	VHF CONNECTING CABLE W/PLUG	5
125	VPNS0589	FRONT CUSHION,STYROFOAM	5
126	VPNS0592	REAR CUSHION,STYROFOAM	5

SCREWS AND WASHERS

Ref. No.	Part No.	Part Name & Description	Remarks
401	VHDS0475	SCREW,STEEL	1
404	VHDS0472	SCREW,STEEL	4
405	VHDS0496	SCREW W/WASHER,STEEL	4
407	XYN26+C5	SCREW W/WASHER,STEEL	2
408	XYN2+J5FZ	SCREW W/WASHER,STEEL	2
410	VHDS0498	SCREW W/WASHER,STEEL	1
413	VHDS0293	SCREW,STEEL	4
414	VHNS0070	MAIN CAM PUSH NUT,STEEL	1
417	VMXS0865	CUT WASHER,NYLON	1
424	XYC26+SF6J	SCREW W/WASHER,STEEL	1
425	XTB3+12A	TAPPING SCREW,STEEL	4
429	VHDS0491	SCREW W/WASHER,STEEL	1
430	XTV26+6FFZJ	TAPPING SCREW,STEEL	2
431	XTV26+6FJ	TAPPING SCREW,STEEL	2
435	XSN26+4	SCREW,STEEL	2
441	VMXS0499	CUT WASHER,NYLON	2
449	VHDS0493	TAPPING SCREW,STEEL	4
450	VHDS0309	SCREW,STEEL	4
456	VHDS0497	SCREW W/WASHER,STEEL	4
458	XTV3+8J	TAPPING SCREW,STEEL	4
460	XTN4+12A	TAPPING SCREW,STEEL	4
461	VHDS0460	SCREW,STEEL	4
462	XTN4+15AR	TAPPING SCREW,STEEL	4

SERVICE FIXTURES AND TOOLS

Ref. No.	Part No.	Part Name & Description	Remarks
	VFMS0003H6	VHSALIGNMENT TAPE	
	VFKS0009	REEL TABLE HEIGHT FIXTURE	
	VFKS0010	POST ADJUSTMENT PLATE	
	VFKS0081	GREASE	
	VFK0329	POST ADJUSTMENT DRIVER	
	VFK1301	SILICON GREASE	
	VFK27	HEAD CLEANING STICK	
	VFK0330	H-POSITION ADJUSTMENT DRIVER	
	VUZS0002	EXTENSION CABLE KIT	
	VUVS0001	MODE SELECT SW ASS'Y	
	VUVS0002	EXTENSION CABLE -1	
	VUVS0003	EXTENSION CABLE -2	
		(FOR Hi-Fi MODEL)	
	VUVS0004	EXTENSION CABLE -2	
		(FOR 4 HEAD MODEL)	
	VUVS0005	EXTENSION CABLE -2	
		(FOR 2 HEAD MODEL)	

11.3. ELECTRICAL REPLACEMENT PARTS LIST

PRINTED CIRCUIT BOARD ASSEMBLY

Ref. No.	Part No.	Part Name & Description	Remarks
E1	VEPS6052HA	MAIN C.B.A.	■ E.S.D. RTL
	(A)		
E1	VEPS6055HA	MAIN C.B.A.	■ E.S.D. RTL
	(B)		
E4	VEPS8052A	OPERATION I C.B.A.	■ RTL
	(A)		
E4	VEPS8052B	OPERATION I C.B.A.	■ RTL
	(B)		
E5	VEPS8053A	OPERATION II C.B.A.	■ RTL
E6	VEPS5019A	Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.	■ RTL
E7	VEPS0A25A	JUNCTION C.B.A.	■ RTL

11.3.1. MAIN C.B.A.■ (A)

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC1001	PS2501-1-X	IC, LINEAR ERROR V. DET	⚠
	OR 0N3131-R.KT	IC, LINEAR ERROR V. DET	⚠
	OR 0N3131-S.KT	IC, LINEAR ERROR V. DET	⚠
IC3001	AN3479FBP	IC, LINEAR VIDEO/AUDIO PROCESS	
IC3101	MN3885S	IC, CCD 1H DELAY	E.S.D.
IC4201	AN3662FBP	IC, LINEAR Hi-Fi AUDIO MTS/SAP PROCESS	
IC6001	MN101D02GPH	IC, 8BIT MICROCONTROLLER	E.S.D.
IC6002	CNA1801N	REELSENSOR UNIT	
	OR SG-254	REEL SENSOR UNIT	
	OR SG-254A	REEL SENSOR UNIT	
IC6003	CNA1801N	REEL SENSOR UNIT	
	OR SG-254	REEL SENSOR UNIT	
	OR SG-254A	REEL SENSOR UNIT	
IC6301	T47C216FF917	IC, 4BIT MICROCONTROLLER INDICATOR PANEL	E.S.D.

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q1001	2SC4533LP.KT		⚠
	OR 2SC5130LF608		⚠
Q1002	2SD2259		
Q1003	2SC4081T106R	CHIP	
	OR 2SD1819A(R,S)	CHIP	
Q1004	2SA1037K146R	CHIP	
	OR 2SB709A(R,S)	CHIP	
Q1005	2SA1576A106R	CHIP	
	OR 2SB1218ARS	CHIP	
Q1051	2SC3852		
	OR 2SD2375(P,Q)		
	OR 2SD2396(K)		
Q1052	2SC2412K1	CHIP	
	OR 2SD601(R,S)	CHIP	
Q1053	2SD2097TV2R	CHIP	
	OR 2SD235800A	CHIP	
Q3001	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q4001	2SA1576A106R	CHIP	
	OR 2SB1218ARS	CHIP	
Q4002	2SD1819A(R,S)	CHIP	
	OR 2SD601(R,S)	CHIP	
Q4003	2SD1819A(R,S)	CHIP	
	OR 2SD601(R,S)	CHIP	
Q4004	DTA114TU	CHIP	
	OR UN5115	CHIP	
Q4005	DTC114TU	CHIP	
	OR UN5215	CHIP	
Q4006	DTC114TU	CHIP	
	OR UN5215	CHIP	
Q4007	DTC114TU	CHIP	
	OR UN5215	CHIP	
Q4101	2SC2412K1	CHIP	
	OR 2SD601(R,S)	CHIP	
Q6001	2SC4081T106R	CHIP	
	OR 2SD1819A(R,S)	CHIP	
Q6002	2SB709A(R,S)	CHIP	
Q6003	2SC4081T106R	CHIP	
	OR 2SD1819A(R,S)	CHIP	
Q6005	2SA1037K146R	CHIP	
	OR 2SB709A(R,S)	CHIP	
Q6006	2SC4081T106R	CHIP	
	OR 2SD1819A(R,S)	CHIP	
Q6007	DTA143EK	CHIP	
	OR DTA143EU	CHIP	
	OR UN211L	CHIP	
	OR UN511L	CHIP	
Q6009	VEKS5522	PHOTO SENSOR UNIT	
Q6010	VEKS5522	PHOTO SENSOR UNIT	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D1001	S1WBA40		⚠
	OR S1WBA60		⚠
D1002	ERA18-04V3		
D1003	ERA18-04V3		
D1005	ERA18-04V3		
D1006	ERC30-01L3		
	OR RU3YXLFC1		
D1007	ERA18-04V3		
D1008	ERB81-004V1		
	OR RK14V1		
D1009	AK03V0		
	OR 1GWJ43TPA3		
D1011	MA4051N-TAKT	ZENER 5.1V	
D1012	MA858		
	OR 1SS135T-77		
D1013	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D1015	MA7180	ZENER 18V	⚠
	OR MA7180A-TR	ZENER 18V	⚠
	OR MA7180B-TR	ZENER 18V	⚠
D1016	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		

Ref. No.	Part No.	Part Name & Description	Remarks
D1051	MA4100N	ZENER 10V	
	OR RD10JSAB3	ZENER 10V	
D1052	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D1053	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D1056	ERA15-01V3		
	OR ERA15-01V5		
D3004	MA4091-M	ZENER 9.1V	
	OR MA4091-MKT	ZENER 9.1V	
	OR MA4091-MMKT	ZENER 9.1V	
	OR RD9.1ESAB1	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
	OR 04AZ9.1ZTPA7	ZENER 9.1V	
D4205	MA4091	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
D4206	MA4091	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
D4207	MA4091	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
D4208	MA4091	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
D6001	VEKS5521	SENSOR LED UNIT	
D6003	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D6324	MA4056-M	ZENER 5.6V	
D6325	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D6326	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R1001	VRESC2TK275T	+-10% 1/2W 2.7M	⚠
R1003	VRESE2TJ334	1/2W 330K	
R1004	ERG2SJW333E	METAL OXIDE 2W 33K	
R1005	ERG1SJW560E	METAL OXIDE 1W 56	
R1006	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1007	ERDS2TJ101	100	
R1008	ERDS2TJ392	3.9K	
R1010	ERD25FYJ100T	10	⚠
	OR VRESS4FJ100E	10	⚠
R1011	ERD25FYJ4R7T	4.7	⚠
	OR VRESS4FJ4R7E	4.7	⚠
R1014	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1015	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1016	ERJ8GEYJ562V	MGF CHIP 1/8W 5.6K	
R1017	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R1018	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R1019	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R1020	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R1022	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1024	ERD2FCVG330T	+-2% 33	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
R1025	VRESE2TJ150	1/2W 15	
R1051	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R1052	ERDS2TJ153	15K	
R1053	ERDS2TJ153	15K	
R1057	ERDS2TJ331	330	
R1058	ERDS2TJ104	100K	
R1068	ERDS2T0	0	●
R3002	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3003	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3004	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3005	ERDS2TJ101	100	
R3021	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R3022	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R3023	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3027	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R3029	ERJ6GEYJ125V	MGF CHIP 1/10W 1.2M	
R3030	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3031	ERJ6GEYJ474V	MGF CHIP 1/10W 470K	
R3033	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R3034	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3035	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3036	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R3041	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3301	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3302	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R3305	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R4001	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4002	ERJ6GEYJ334V	MGF CHIP 1/10W 330K	
R4003	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R4004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4005	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R4006	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R4007	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R4008	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R4010	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4011	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4012	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4014	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4016	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R4017	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4027	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R4028	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4101	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R4102	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4103	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4201	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4202	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4203	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4204	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4205	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4206	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4207	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4208	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4209	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4210	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4213	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4214	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4218	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4219	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4224	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4225	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4226	ERDS2TJ152	1.5K	
R4227	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R4453	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R4901	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6001	ERDS2TJ101	100	
R6003	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6005	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6006	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6007	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6010	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	

Ref. No.	Part No.	Part Name & Description	Remarks
R6011	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6012	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6013	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6016	ERJ6GEYJ243V	MGF CHIP 1/10W 24K	
R6017	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6018	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6019	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6020	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6021	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6022	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6024	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6025	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R6026	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6027	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6028	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6029	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6030	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6033	ERDS2TJ681	680	
R6035	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6036	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R6037	ERDS2TJ391	390	
R6038	ERDS2TJ560	56	
R6039	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6040	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6041	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6042	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6043	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6044	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6045	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6046	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6047	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6048	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6049	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6050	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6051	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6052	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6053	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6054	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6055	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6056	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6057	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6058	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6059	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6060	ERJ6GEYJ475V	MGF CHIP 1/10W 4.7M	
R6061	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6062	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R6063	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6064	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6066	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6068	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6069	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6070	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6071	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6072	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6073	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6074	ERDS2TJ272	2.7K	
R6076	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6077	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6078	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6079	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6080	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6081	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6082	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6083	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6084	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6085	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6086	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6087	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6089	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6090	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6091	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6098	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6099	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	

Ref. No.	Part No.	Part Name & Description	Remarks
R6103	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6109	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6110	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6115	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6116	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6201	EVNGBAA01B24	VARIABLE 20K	
R6202	ERJ6GEYJ274V	MGF CHIP 1/10W 270K	
R6203	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6204	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R6205	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6224	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6228	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R6230	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6231	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R6316	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6346	ERDS2TJ470	47	
R6350	ERDS2TJ470	47	
R6351	ERDS2TJ330	33	
R6353	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6364	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6365	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6366	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6367	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6368	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6369	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R7002	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R7004	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R7006	ERJ6GEYJ112V	MGF CHIP 1/10W 1.1K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C1001	ECKNTS103MF8	CERAMIC +-20% 125V 0.01	⚠
	OR VCKSTQG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSUQD103MY	CERAMIC +-20% 125V 0.01	⚠
C1002	ECKNNB332ME8	CERAMIC +-20% 125V 3300P	⚠
	OR ECKNTS332ME8	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSTQG332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSUQD332MX	CERAMIC +-20% 125V 3300P	⚠
C1003	ECKNNB332ME8	CERAMIC +-20% 125V 3300P	⚠
	OR ECKNTS332ME8	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSTQG332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSUQD332MX	CERAMIC +-20% 125V 3300P	⚠
C1004	ECEA2DU121YB	ELECTROLYTIC 200V 120	⚠
	OR VCESAN2D121B	ELECTROLYTIC 200V 120	⚠
	OR VCESR2D121XB	ELECTROLYTIC 200V 120	⚠
C1005	ECA2DHG4R7B	ELECTROLYTIC 200V 4.7	
C1006	ECKW2H221KB5	CERAMIC 500V 220P	
C1007	VCKSLZE224MB	CERAMIC +-20% 25V 0.22	
C1009	VCYSBRE183KX	CERAMIC 25V 0.018	
C1010	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C1011	ECA1HHG4R7B	ELECTROLYTIC 50V 4.7	
C1012	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1013	ECA1EM331B	ELECTROLYTIC 25V 330	
C1014	ECEA1HGE470	ELECTROLYTIC 50V 47	
C1016	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1017	ECA0JM102B	ELECTROLYTIC 6.3V 1000	
C1018	ECQB1H104P9	POLYESTER +100%-0% 50V 0.1	
C1019	ECEA0JEE101	ELECTROLYTIC 6.3V 100	
C1021	EEUGA1H1R0B	ELECTROLYTIC 50V 1	
C1023	ECKW1H103ZF5	CERAMIC +80%-20% 50V 0.01	
C1025	ECKNRS101MBY	CERAMIC +-20% 125V 100P	⚠
	OR ECKNTS101MB	CERAMIC +-20% 125V 100	⚠
	OR VCKSTNG101KW	CERAMIC 125V 100P	⚠

Ref. No.	Part No.	Part Name & Description	Remarks
	OR VCKSUND101KW	CERAMIC 125V 100P	⚠
C1027	ECKNTS103MF8	CERAMIC +-20% 125V 0.01	⚠
	OR VCKSTQG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSUQD103MY	CERAMIC +-20% 125V 0.01	⚠
C1028	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1029	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C1030	VCYSBRE183KX	CERAMIC 25V 0.018	
C1032	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C1051	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C1052	ECEA1CKA100	ELECTROLYTIC 16V 10	
C1058	ECEA0JEE101	ELECTROLYTIC 6.3V 100	
C1059	ECEA1CKA470	ELECTROLYTIC 16V 47	
C3001	ECA0JM471	ELECTROLYTIC 6.3V 470	
C3002	ECUV1E104ZFN	CCHIP +80%-20% 25V 0.1	
C3011	ECUV1H103KBN	C CHIP 50V 0.01	
C3014	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3015	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3017	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3018	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3019	ECUV1H560JCN	C CHIP +-5% 50V 56P	
C3021	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C3022	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3023	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3024	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3025	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3026	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3027	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C3028	ECEA1CKA100	ELECTROLYTIC 16V 10	
C3029	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3030	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3031	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3032	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3033	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3034	ECEA1HKAR22	ELECTROLYTIC 50V 0.22	
C3035	ECUV1H560JCN	C CHIP +-5% 50V 56P	
C3036	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3037	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C3038	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3039	ECUV1H822KBN	C CHIP 50V 8200P	
C3043	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3044	ECUV1C474ZFN	C CHIP +80%-20% 16V 0.47	
C3045	ECUV1C474ZFN	C CHIP +80%-20% 16V 0.47	
C3047	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3048	ECUV1H560JCN	C CHIP +-5% 50V 56P	
C3049	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3050	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3051	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3052	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3053	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C3054	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3055	ECUV1H392KBN	C CHIP 50V 3900P	
C3056	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3057	ECUV1E104ZFN	C CHIP +80%-20%25V 0.1	
C3058	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3059	ECUV1H020CCN	C CHIP +-0.25P 50V 2P	
C3062	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3101	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3102	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3104	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3105	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3106	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3108	ECUV1H102KBN	C CHIP 50V 1000P	
C3109	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3302	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3303	ECUV1H121JCN	C CHIP +-5% 50V 120P	
C3306	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C3308	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3312	ECUV1H100CCN	C CHIP +-0.25P 50V 10P	
C4001	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C4002	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4003	ECUV1H272KBN	C CHIP 50V 2700P	

Ref. No.	Part No.	Part Name & Description	Remarks
C4004	ECUV1H103KBN	C CHIP 50V 0.01	
C4005	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C4006	ECUV1H102KBN	C CHIP 50V 1000P	
C4007	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C4008	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C4009	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4010	ECUV1E273KBN	C CHIP 25V 0.027	
C4011	ECUV1H822KBN	C CHIP 50V 8200P	
C4012	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4013	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C4014	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4017	ECUV1H103KBN	C CHIP 50V 0.01	
C4020	ECUV1H102KBN	C CHIP 50V 1000P	
C4101	ECUV1H221JCN	C CHIP +-5% 50V 220P	
C4102	ECQB1562JF	POLYESTER +-5% 100V 5600P	
C4103	ECUV1H103KBN	C CHIP 50V 0.01	
C4104	ECUV1H103KBN	C CHIP 50V 0.01	
C4106	ECEA1CKA220	ELECTROLYTIC 16V 22	
C4201	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C4202	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C4203	ECEA0JKA330	ELECTROLYTIC 6.3V 33	
C4204	ECEA0JKA330	ELECTROLYTIC 6.3V 33	
C4205	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4206	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4207	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4208	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4209	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4210	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4211	ECUV1H153KBN	C CHIP 50V 0.015	
C4212	ECUV1H153KBN	C CHIP 50V 0.015	
C4213	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4214	ECEA1CKA101	ELECTROLYTIC 16V 100	
C4215	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4216	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4217	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C4218	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4219	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4227	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C4228	ECUV1H103KBN	C CHIP 50V 0.01	
C4230	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4231	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4455	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4456	ECUV1H103ZFN	C CHIP +80%-20%50V 0.01	
C4457	ECUV1E104KBN	C CHIP 25V 0.1	
C4458	ECUV1E104KBN	C CHIP 25V 0.1	
C4460	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4461	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4901	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4902	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C4903	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3	
C4904	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3	
C4905	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4906	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4911	ECUV1E223KBN	C CHIP 25V 0.022	
C4912	ECUV1E104KBN	C CHIP 25V 0.1	
C4913	ECUV1H103KBN	C CHIP 50V 0.01	
C4915	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4916	ECUV1E104ZFN	CCHIP +80%-20% 25V 0.1	
C4917	ECUV1E104KBN	C CHIP 25V 0.1	
C4918	ECUV1E104KBN	C CHIP 25V 0.1	
C4919	ECUV1E104KBN	C CHIP 25V 0.1	
C4920	ECUV1E104KBN	C CHIP 25V 0.1	
C6003	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6005	ECUV1H120JCN	C CHIP +-5% 50V 12P	
C6006	ECUV1H100CCN	C CHIP +-0.25P 50V 10P	
C6016	ECEA0JU471	ELECTROLYTIC 6.3V 470	
C6019	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6026	ECUV1H102KBN	C CHIP 50V 1000P	
C6033	ECUV1H104ZFN	C CHIP +80%-20% 50V 0.1	
C6201	ECUV1H102KBN	C CHIP 50V 1000P	
C6203	ECUV1H103KBN	C CHIP 50V 0.01	
C6207	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6208	ECEA1HKA010	ELECTROLYTIC 50V 1	

Ref. No.	Part No.	Part Name & Description	Remarks
C6213	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6214	ECUV1H102KBN	C CHIP 50V 1000P	
C6216	ECUV1H103KBN	C CHIP 50V 0.01	
C6217	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6218	ECEA1CKA100	ELECTROLYTIC 16V 10	
C6221	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C6222	ECUV1H272KBN	C CHIP 50V 2700P	
C6223	ECUV1H103KBN	C CHIP 50V 0.01	
C6224	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6228	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6230	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6305	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C6306	ECA0JM471	ELECTROLYTIC 6.3V 470	
C6307	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6308	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C7001	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C7010	ECUV1H102KBN	CCHIP 50V 1000P	
C7015	ECEA1CKA100	ELECTROLYTIC 16V 10	
C7025	ECEA1CKA101	ELECTROLYTIC 16V 100	
C7029	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	

FILTERS

Ref. No.	Part No.	Part Name & Description	Remarks
FL4901	EFCT4R5YS5AA	CERAMIC FILTER	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L1001	ELF15N005AB	LINE FILTER 0.5A 18M	⚠
	OR VLQS0166	LINE FILTER 0.5A 18M	⚠
	OR VLQS0167	LINE FILTER 0.5A 18M	⚠
L1002	VLQSAB7D220K	22	
L1003	VLQSAB7D100K	10	
L1006	VLPS0083		
L3014	VLQSH02R390K	39	
L3016	ELESN330KA	33	
L3018	ELESN470KA	47	
L3101	ELESN101KA	100	
L4001	ELELN153KA	15M	
L4101	ELESN471KA	470	
L4202	ELESN101KA	100	
L4451	ELESN101KA	100	
L6301	ELESN101KA	100	
L7001	VLQSAB7D220K	22	
L7003	VLQSH02R101K	100	
L7005	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●

CRYSTAL OSCILLATOR

Ref. No.	Part No.	Part Name & Description	Remarks
X3010	VSXS0195		
X6001	VSXS0232-TB		
X6301	EF0EC8004T4		

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P1001	VJPS1154	CONNECTOR 2P	
P3001	VJPS0885	CONNECTOR 20P	
P4001	VJSS0888	FE CONNECTOR 2P	
P6002	VJPS0881	CONNECTOR 8P	
P6201	VJPS0883	CONNECTOR 14P	
P6320	VJPS0712	CONNECTOR 19P	
P6322	VJSS0869	CONNECTOR RECEPTACLE 7P	MKA

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW6001	VSHS0058	LEAF SWITCH-SAFETY TAB	
SW6002	VSSS0159	MODE SELECT SWITCH	
SW7001	VSSS0152	SELECT SWITCH	

FUSE & PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
F1001	VSFS0003A16	FUSE 125V 1.6A	⚠
	OR VSFS0032B16	FUSE 125V 1.6A	⚠
	OR XBA1C16NU100	FUSE 125V 1.6A	⚠
PR1001	ICP-N38-TP1	IC PROTECTOR 1.5A	⚠
	OR UNH000600A	IC PROTECTOR 1.5A	⚠
PR1002	ICP-N38-TP1	IC PROTECTOR 1.5A	⚠
	OR UNH000600A	IC PROTECTOR 1.5A	⚠

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T1001	ETS28AD2J3PP		⚠
	OR VTPS0041-2		⚠
T4101	EIQ7QF018Q		

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK3001	VJHS0727	AUDIO/VIDEO JACK SOCKET	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
E21	VEQS0611	TUNER,UHF/VHF NR	
E23	EYF52BC	FUSE HOLDER	
E25	VEKS5627	DISPLAY TUBE/INFRARED RECEIVER UNIT	

11.3.2. MAIN C.B.A.■ (B)

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC1001	PS2501-1-X	IC, LINEAR ERROR V. DET	⚠
	OR 0N3131-R.KT	IC, LINEAR ERROR V. DET	⚠
	OR 0N3131-S.KT	IC, LINEAR ERROR V. DET	⚠
IC3001	AN3479FBP	IC, LINEAR VIDEO/AUDIO PROCESS	
IC3101	MN3885S	IC, CCD 1H DELAY	E.S.D.
IC3801	AN3275SB	IC, LINEAR SYNC DETECTOR	
IC4201	AN3662FBP	IC, LINEAR Hi-Fi AUDIO MTS/SAP PROCESS	
IC6001	MN101D02HPK	IC, 8BIT MICROCONTROLLER	E.S.D.
IC6002	CNA1801N	REEL SENSOR UNIT	
	OR SG-254	REEL SENSOR UNIT	
	OR SG-254A	REEL SENSOR UNIT	
IC6003	CNA1801N	REEL SENSOR UNIT	
	OR SG-254	REEL SENSOR UNIT	
	OR SG-254A	REEL SENSOR UNIT	
IC6301	M38122-123FP	IC, 4BIT MICROCONTROLLER INDICATOR PANEL	E.S.D.

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q1001	2SC4533LP.KT		⚠
	OR 2SC5130LF608		⚠
Q1002	2SD2259		
Q1003	2SC4081T106R	CHIP	
	OR 2SD1819A(R,S)	CHIP	
Q1004	2SA1037K146R	CHIP	
	OR 2SB709A(R,S)	CHIP	
Q1005	2SA1576A106R	CHIP	
	OR 2SB1218ARS	CHIP	
Q1051	2SC3852		

Ref. No.	Part No.	Part Name & Description	Remarks
	OR 2SD2375(P,Q)		
	OR 2SD2396(K)		
Q1052	2SC2412K1	CHIP	
	OR 2SD601(R,S)	CHIP	
Q1053	2SD2097TV2R	CHIP	
	OR 2SD235800A	CHIP	
Q3001	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q3875	2SA1037K146R	CHIP	
	OR 2SB709A	CHIP	
Q4001	2SA1576A106R	CHIP	
	OR 2SB1218ARS	CHIP	
Q4002	2SD1819A(R,S)	CHIP	
	OR 2SD601(R,S)	CHIP	
Q4003	2SD1819A(R,S)	CHIP	
	OR 2SD601(R,S)	CHIP	
Q4004	DTA114TU	CHIP	
	OR UN5115	CHIP	
Q4005	DTC114TU	CHIP	
	OR UN5215	CHIP	
Q4006	DTC114TU	CHIP	
	OR UN5215	CHIP	
Q4007	DTC114TU	CHIP	
	OR UN5215	CHIP	
Q4101	2SC2412K1	CHIP	
	OR 2SD601(R,S)	CHIP	
Q6001	2SC4081T106R	CHIP	
	OR 2SD1819A(R,S)	CHIP	
Q6002	2SB709A(R,S)	CHIP	
Q6003	2SC4081T106R	CHIP	
	OR 2SD1819A(R,S)	CHIP	
Q6005	2SA1037K146R	CHIP	
	OR 2SB709A(R,S)	CHIP	
Q6006	2SC4081T106R	CHIP	
	OR 2SD1819A(R,S)	CHIP	
Q6007	DTA143EK	CHIP	
	OR DTA143EU	CHIP	
	OR UN211L	CHIP	
	OR UN511L	CHIP	
Q6009	VEKS5522	PHOTOSENSOR UNIT	
Q6010	VEKS5522	PHOTO SENSOR UNIT	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D1001	S1WBA40		⚠
	OR S1WBA60		⚠
D1002	ERA18-04V3		
D1003	ERA18-04V3		
D1005	ERA18-04V3		
D1006	ERC30-01L3		
	OR RU3YXLFC1		
D1007	ERA18-04V3		
D1008	ERB81-004V1		
	OR RK14V1		
D1009	AK03V0		
	OR 1GWJ43TPA3		
D1011	MA4051N-TAKT	ZENER 5.1V	
D1012	MA858		
	OR 1SS135T-77		
D1013	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D1015	MA7180	ZENER 18V	⚠
	OR MA7180A-TR	ZENER 18V	⚠
	OR MA7180B-TR	ZENER 18V	⚠
D1016	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D1051	MA4100N	ZENER 10V	
	OR RD10JSAB3	ZENER 10V	
D1052	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D1053	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D1056	ERA15-01V3		
	OR ERA15-01V5		
D3004	MA4091-M	ZENER 9.1V	
	OR MA4091-MKT	ZENER 9.1V	
	OR MA4091-MMKT	ZENER 9.1V	
	OR RD9.1ESAB1	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
	OR 04AZ9.1ZTPA7	ZENER 9.1V	
D4205	MA4091	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
D4206	MA4091	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
D4207	MA4091	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
D4208	MA4091	ZENER 9.1V	
	OR RD9.1ESAB2	ZENER 9.1V	
D6001	VEKS5521	SENSOR LED UNIT	
D6003	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D6324	MA4056-M	ZENER 5.6V	
D6325	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		
D6326	MA165		
	OR WG713A		
	OR 1SS119		
	OR 1SS133T		

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R1001	VRESC2TK275T	+-10% 1/2W 2.7M	⚠
R1003	VRESE2TJ334	1/2W 330K	
R1004	ERG2SJW333E	METAL OXIDE 2W 33K	
R1005	ERG1SJW560E	METAL OXIDE 1W 56	
R1006	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R1007	ERDS2TJ101	100	
R1008	ERDS2TJ392	3.9K	

Ref. No.	Part No.	Part Name & Description	Remarks
R1010	ERD25FYJ100T	10	⚠
	OR VRESS4FJ100E	10	⚠
R1011	ERD25FYJ4R7T	4.7	⚠
	OR VRESS4FJ4R7E	4.7	⚠
R1014	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1015	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1016	ERJ8GEYJ562V	MGF CHIP 1/8W 5.6K	
R1017	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R1018	ERJ6GEYJ183V	MGF CHIP 1/10W 18K	
R1019	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R1020	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R1022	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R1024	ERD2FCVG330T	+-2% 33	⚠
R1025	VRESE2TJ150	1/2W 15	
R1051	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R1052	ERDS2TJ153	15K	
R1053	ERDS2TJ153	15K	
R1057	ERDS2TJ331	330	
R1058	ERDS2TJ104	100K	
R1068	ERDS2T0	0	●
R3002	ERJ6GEYJ331V	MGF CHIP 1/10W 330	
R3003	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R3004	ERJ6GEYJ750V	MGF CHIP 1/10W 75	
R3005	ERDS2TJ101	100	
R3021	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R3022	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R3023	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3027	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R3029	ERJ6GEYJ125V	MGF CHIP 1/10W 1.2M	
R3030	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3031	ERJ6GEYJ474V	MGF CHIP 1/10W 470K	
R3033	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R3034	ERJ6GEYJ121V	MGF CHIP 1/10W 120	
R3035	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R3036	ERJ6GEYJ122V	MGF CHIP 1/10W 1.2K	
R3041	ERJ6GEYJ750V	MGFCHIP 1/10W 75	
R3301	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R3302	ERJ6GEYJ392V	MGF CHIP 1/10W 3.9K	
R3305	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R3803	ERJ6GEYG473V	MGF CHIP +-2% 1/10W 47K	
R3807	ERJ6GEYJ393V	MGF CHIP 1/10W 39K	
R3810	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3811	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3874	ERDS2TJ471	470	
R3875	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4001	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4002	ERJ6GEYJ334V	MGF CHIP 1/10W 330K	
R4003	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R4004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4005	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R4006	ERJ6GEYJ681V	MGF CHIP 1/10W 680	
R4007	ERJ6GEYJ821V	MGF CHIP 1/10W 820	
R4008	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R4010	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4011	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4012	ERJ6GEYJ682V	MGF CHIP 1/10W 6.8K	
R4014	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4015	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R4016	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R4017	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4027	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R4028	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R4101	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R4102	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4103	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R4201	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4202	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4203	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4204	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4205	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R4206	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	

Ref. No.	Part No.	Part Name & Description	Remarks
R4207	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4208	ERJ6GEYJ822V	MGF CHIP 1/10W 8.2K	
R4209	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4210	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4213	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4214	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4218	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4219	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4224	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R4225	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R4226	ERDS2TJ152	1.5K	
R4227	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R4453	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R4901	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6001	ERDS2TJ101	100	
R6003	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6004	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6005	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6006	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6007	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6010	ERJ6GEYJ182V	MGF CHIP 1/10W 1.8K	
R6011	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6012	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6013	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6014	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6015	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6016	ERJ6GEYJ243V	MGF CHIP 1/10W 24K	
R6017	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6018	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6019	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6020	ERJ6GEYJ221V	MGF CHIP 1/10W 220	
R6021	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6022	ERJ6GEYJ333V	MGF CHIP 1/10W 33K	
R6024	ERJ6GEYJ562V	MGF CHIP 1/10W 5.6K	
R6025	ERJ6GEYJ332V	MGF CHIP 1/10W 3.3K	
R6026	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6027	ERJ6GEYJ101V	MGF CHIP 1/10W 100	
R6028	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6029	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6030	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6033	ERDS2TJ681	680	
R6035	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6036	ERJ6GEYJ563V	MGF CHIP 1/10W 56K	
R6037	ERDS2TJ391	390	
R6038	ERDS2TJ560	56	
R6039	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6040	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6041	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6042	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6043	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6044	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6045	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6046	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6047	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6048	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6049	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6050	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6051	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6052	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6053	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6054	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6055	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6056	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6057	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6058	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6059	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6060	ERJ6GEYJ475V	MGF CHIP 1/10W 4.7M	
R6061	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6062	ERJ6GEYJ224V	MGF CHIP 1/10W 220K	
R6063	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6064	ERJ6GEYJ153V	MGF CHIP 1/10W 15K	
R6066	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6068	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	

Ref. No.	Part No.	Part Name & Description	Remarks
R6069	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6070	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6071	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6072	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6073	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6074	ERDS2TJ272	2.7K	
R6076	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6077	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6078	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6079	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6080	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6081	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6082	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6083	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6084	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6085	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6086	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6087	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6088	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6089	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6091	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6098	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6099	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6103	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6109	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6110	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6115	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6116	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R6201	EVNGBAA01B24	VARIABLE 20K	
R6202	ERJ6GEYJ274V	MGF CHIP 1/10W 270K	
R6203	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6204	ERJ6GEYJ184V	MGF CHIP 1/10W 180K	
R6205	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R6224	ERJ6GEYJ472V	MGF CHIP 1/10W 4.7K	
R6228	ERJ6GEYJ152V	MGF CHIP 1/10W 1.5K	
R6230	ERJ6GEYJ222V	MGF CHIP 1/10W 2.2K	
R6231	ERJ6GEYJ225V	MGF CHIP 1/10W 2.2M	
R6301	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R6302	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R6303	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R6304	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R6305	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R6306	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R6307	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R6308	ERJ6GEYJ683V	MGF CHIP 1/10W 68K	
R6309	ERDS2TJ270	27	
R6310	ERDS2TJ270	27	
R6322	ERJ6GEYJ223V	MGF CHIP 1/10W 22K	
R6346	ERDS2TJ470	47	
R6353	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R6364	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6365	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6366	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6367	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6368	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6369	ERJ6GEYJ104V	MGF CHIP 1/10W 100K	
R6372	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
R7002	ERJ6GEYJ271V	MGF CHIP 1/10W 270	
R7004	ERJ6GEYJ103V	MGF CHIP 1/10W 10K	
R7006	ERJ6GEYJ112V	MGF CHIP 1/10W 1.1K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C1001	ECKNTS103MF8	CERAMIC +-20% 125V 0.01	⚠
	OR VCKSTQG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSUQD103MY	CERAMIC +-20% 125V 0.01	⚠
C1002	ECKNNB332ME8	CERAMIC +-20% 125V 3300P	⚠
	OR ECKNTS332ME8	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSTQG332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSUQD332MX	CERAMIC +-20% 125V 3300P	⚠
C1003	ECKNNB332ME8	CERAMIC +-20% 125V 3300P	⚠
	OR ECKNTS332ME8	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSTQG332MX	CERAMIC +-20% 125V 3300P	⚠
	OR VCKSUQD332MX	CERAMIC +-20% 125V 3300P	⚠
C1004	ECEA2DU121YB	ELECTROLYTIC 200V 120	⚠
	OR VCESAN2D121B	ELECTROLYTIC 200V 120	⚠
	OR VCESR2D121XB	ELECTROLYTIC 200V 120	⚠
C1005	ECA2DHG4R7B	ELECTROLYTIC 200V 4.7	
C1006	ECKW2H221KB5	CERAMIC 500V 220P	
C1007	VCKSLZE224MB	CERAMIC +-20% 25V 0.22	
C1009	VCYSBRE183KX	CERAMIC 25V 0.018	
C1010	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C1011	ECA1HHG4R7B	ELECTROLYTIC 50V 4.7	
C1012	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1013	ECA1EM331B	ELECTROLYTIC 25V 330	
C1014	ECEA1HGE470	ELECTROLYTIC 50V 47	
C1016	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1017	ECA0JM102B	ELECTROLYTIC 6.3V 1000	
C1018	ECQB1H104P9	POLYESTER +100%-0% 50V 0.1	
C1019	ECEA0JEE101	ELECTROLYTIC 6.3V 100	
C1021	EEUGA1H1R0B	ELECTROLYTIC 50V 1	
C1023	ECKW1H103ZF5	CERAMIC +80%-20% 50V 0.01	
C1025	ECKNRS101MBY	CERAMIC +-20% 125V 100P	⚠
	OR ECKNTS101MB	CERAMIC +-20% 125V 100	⚠
	OR VCKSTNG101KW	CERAMIC 125V 100P	⚠
	OR VCKSUND101KW	CERAMIC 125V 100P	⚠
C1027	ECKNTS103MF8	CERAMIC +-20% 125V 0.01	⚠
	OR VCKSTQG103ZY	CERAMIC +80%-20% 125V 0.01	⚠
	OR VCKSUQD103MY	CERAMIC +-20% 125V 0.01	⚠
C1028	ECEA1PEE331	ELECTROLYTIC 18V 330	
C1029	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C1030	VCYSBRE183KX	CERAMIC 25V 0.018	
C1032	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C1051	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C1052	ECEA1CKA100	ELECTROLYTIC 16V 10	
C1058	ECEA0JEE101	ELECTROLYTIC 6.3V 100	
C1059	ECEA1CKA470	ELECTROLYTIC 16V 47	
C3001	ECA0JM471	ELECTROLYTIC 6.3V 470	
C3002	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3011	ECUV1H103KBN	C CHIP 50V 0.01	
C3014	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3015	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3017	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3018	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3019	ECUV1H560JCN	C CHIP +-5% 50V 56P	
C3021	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C3022	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3023	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3024	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3025	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3026	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3027	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C3028	ECEA1CKA100	ELECTROLYTIC 16V 10	
C3029	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3030	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3031	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3032	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3033	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C3034	ECEA1HKAR22	ELECTROLYTIC 50V 0.22	
C3035	ECUV1H560JCN	C CHIP +-5% 50V 56P	
C3036	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3037	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C3038	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	

Ref. No.	Part No.	Part Name & Description	Remarks
C3039	ECUV1H822KBN	C CHIP 50V 8200P	
C3043	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3044	ECUV1C474ZFN	C CHIP +80%-20% 16V 0.47	
C3045	ECUV1C474ZFN	C CHIP +80%-20% 16V 0.47	
C3047	ECUV1H181JCN	C CHIP +-5% 50V 180P	
C3048	ECUV1H560JCN	C CHIP +-5% 50V 56P	
C3049	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3050	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3051	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3052	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3053	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C3054	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3055	ECUV1H392KBN	C CHIP 50V 3900P	
C3056	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3057	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3058	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3059	ECUV1H020CCN	C CHIP +-0.25P 50V 2P	
C3062	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3101	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3102	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3104	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3105	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3106	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3108	ECUV1H102KBN	C CHIP 50V 1000P	
C3109	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3302	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3303	ECUV1H121JCN	C CHIP +-5% 50V 120P	
C3306	ECEA1HKAR47	ELECTROLYTIC 50V 0.47	
C3308	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3312	ECUV1H100CCN	C CHIP +-0.25P 50V 10P	
C3801	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C3802	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3803	ECUV1H332KBN	C CHIP 50V 3300P	
C3804	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3805	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3806	ECUV1H392KBN	C CHIP 50V 3900P	
C3807	ECUV1H103KBN	C CHIP 50V 0.01	
C3808	ECUV1E104KBN	C CHIP 25V 0.1	
C3811	ECUV1H103KBN	C CHIP 50V 0.01	
C3812	ECUV1H102KBN	C CHIP 50V 1000P	
C3815	ECUV1E104KBN	C CHIP 25V 0.1	
C3816	VCUSTBC224KB	CERAMIC +80%-20% 16V 0.22	
C3817	ECUV1H103KBN	C CHIP 50V 0.01	
C3818	ECUV1H103KBN	C CHIP 50V 0.01	
C3819	ECUV1H103KBN	C CHIP 50V 0.01	
C3820	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3821	ECUV1H390JCN	C CHIP +-5% 50V 39P	
C3822	ECEA1HKA010	ELECTROLYTIC 50V 1	
C3825	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C3826	ECUV1C474ZFN	C CHIP +80%-20% 16V 0.47	
C3828	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C4001	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C4002	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4003	ECUV1H272KBN	C CHIP 50V 2700P	
C4004	ECUV1H103KBN	C CHIP 50V 0.01	
C4005	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C4006	ECUV1H102KBN	C CHIP 50V 1000P	
C4007	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C4008	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C4009	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4010	ECUV1E273KBN	C CHIP 25V 0.027	
C4011	ECUV1H822KBN	C CHIP 50V 8200P	
C4012	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4013	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C4014	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4017	ECUV1H103KBN	C CHIP 50V 0.01	
C4020	ECUV1H102KBN	C CHIP 50V 1000P	
C4101	ECUV1H221JCN	C CHIP +-5% 50V 220P	
C4102	ECQB1562JF	POLYESTER +-5% 100V 5600P	
C4103	ECUV1H103KBN	C CHIP 50V 0.01	
C4104	ECUV1H103KBN	C CHIP 50V 0.01	
C4106	ECEA1CKA220	ELECTROLYTIC 16V 22	
C4201	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	

Ref. No.	Part No.	Part Name & Description	Remarks
C4202	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C4203	ECEA0JKA330	ELECTROLYTIC 6.3V 33	
C4204	ECEA0JKA330	ELECTROLYTIC 6.3V 33	
C4205	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4206	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4207	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4208	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4209	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4210	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4211	ECUV1H153KBN	C CHIP 50V 0.015	
C4212	ECUV1H153KBN	C CHIP 50V 0.015	
C4213	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4214	ECEA1CKA101	ELECTROLYTIC 16V 100	
C4215	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4216	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4217	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C4218	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4219	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4227	ECUV1C224ZFN	C CHIP +80%-20% 16V 0.22	
C4228	ECUV1H103KBN	C CHIP 50V 0.01	
C4230	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4231	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4455	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4456	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4457	ECUV1E104KBN	C CHIP 25V 0.1	
C4458	ECUV1E104KBN	C CHIP 25V 0.1	
C4460	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4461	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4901	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4902	ECEA1HKA2R2	ELECTROLYTIC 50V 2.2	
C4903	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3	
C4904	ECEA1HKA3R3	ELECTROLYTIC 50V 3.3	
C4905	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4906	ECEA1HKA010	ELECTROLYTIC 50V 1	
C4911	ECUV1E223KBN	C CHIP 25V 0.022	
C4912	ECUV1E104KBN	C CHIP 25V 0.1	
C4913	ECUV1H103KBN	C CHIP 50V 0.01	
C4915	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C4916	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4917	ECUV1E104KBN	C CHIP 25V 0.1	
C4918	ECUV1E104KBN	C CHIP 25V 0.1	
C4919	ECUV1E104KBN	C CHIP 25V 0.1	
C4920	ECUV1E104KBN	C CHIP 25V 0.1	
C6003	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6005	ECUV1H120JCN	C CHIP +-5% 50V 12P	
C6006	ECUV1H100CCN	C CHIP +-0.25P 50V 10P	
C6016	ECEA0JU471	ELECTROLYTIC 6.3V 470	
C6019	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6026	ECUV1H102KBN	C CHIP 50V 1000P	
C6033	ECUV1H104ZFN	C CHIP +80%-20% 50V 0.1	
C6201	ECUV1H102KBN	C CHIP 50V 1000P	
C6203	ECUV1H103KBN	C CHIP 50V 0.01	
C6207	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6208	ECEA1HKA010	ELECTROLYTIC 50V 1	
C6213	ECUV1H101JCN	C CHIP +-5% 50V 100P	
C6214	ECUV1H102KBN	C CHIP 50V 1000P	
C6216	ECUV1H103KBN	C CHIP 50V 0.01	
C6217	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6218	ECEA1CKA100	ELECTROLYTIC 16V 10	
C6221	ECEA0JKA220	ELECTROLYTIC 6.3V 22	
C6222	ECUV1H272KBN	C CHIP 50V 2700P	
C6223	ECUV1H103KBN	C CHIP 50V 0.01	
C6224	ECEA0JKA101	ELECTROLYTIC 6.3V 100	
C6228	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6230	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6302	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C6304	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C6305	ECEA0JKA470	ELECTROLYTIC 6.3V 47	
C6306	ECA0JM471	ELECTROLYTIC 6.3V 470	
C7001	ECEA0JKA221	ELECTROLYTIC 6.3V 220	
C7010	ECUV1H102KBN	C CHIP 50V 1000P	
C7015	ECEA1CKA100	ELECTROLYTIC 16V 10	
C7025	ECEA1CKA101	ELECTROLYTIC 16V 100	

Ref. No.	Part No.	Part Name & Description	Remarks
C7029	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	

FILTERS

Ref. No.	Part No.	Part Name & Description	Remarks
FL4901	EFCT4R5YS5AA	CERAMIC FILTER	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L1001	ELF15N005AB	LINE FILTER 0.5A 18M	⚠
	OR VLQS0166	LINE FILTER 0.5A 18M	⚠
	OR VLQS0167	LINE FILTER 0.5A 18M	⚠
L1002	VLQSAB7D220K	22	
L1003	VLQSAB7D100K	10	
L1006	VLPS0083		
L3014	VLQSH02R390K	39	
L3016	ELESN330KA	33	
L3018	ELESN470KA	47	
L3101	ELESN101KA	100	
L3801	ELESN101KA	100	
L3802	ELESN470KA	47	
L4001	ELELN153KA	15M	
L4101	ELESN471KA	470	
L4202	ELESN101KA	100	
L4451	ELESN101KA	100	
L6301	ELESN101KA	100	
L7001	VLQSAB7D220K	22	
L7003	VLQSH02R101K	100	
L7005	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●

CRYSTAL OSCILLATOR

Ref. No.	Part No.	Part Name & Description	Remarks
X3010	VSXS0195		
X6001	VSXS0232-TB		
X6301	EF0EC4004T4		

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P1001	VJPS1154	CONNECTOR 2P	
P3001	VJPS0885	CONNECTOR 20P	
P4001	VJSS0888	FE CONNECTOR 2P	
P6002	VJPS0881	CONNECTOR 8P	
P6201	VJPS0883	CONNECTOR 14P	
P6320	VJPS0712	CONNECTOR 19P	
P6322	VJSS0869	CONNECTOR RECEPTACLE 7P	MKA

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW6001	VSHS0058	LEAF SWITCH-SAFETY TAB	
SW6002	VSSS0159	MODE SELECT SWITCH	
SW7001	VSSS0152	SELECT SWITCH	

FUSE & PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
F1001	VSFS0003A16	FUSE 125V 1.6A	⚠
	OR VSFS0032B16	FUSE 125V 1.6A	⚠
	OR XBA1C16NU100	FUSE 125V 1.6A	⚠
PR1001	ICP-N38-TP1	IC PROTECTOR 1.5A	⚠
	OR UNH000600A	IC PROTECTOR 1.5A	⚠
PR1002	ICP-N38-TP1	IC PROTECTOR 1.5A	⚠
	OR UNH000600A	IC PROTECTOR 1.5A	⚠

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T1001	ETS28AD2J3PP		⚠
	OR VTPS0041-2		⚠
T4101	EIQ7QF018Q		

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK3001	VJHS0727	AUDIO/VIDEO JACK SOCKET	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
E21	VEQS0611	TUNER,UHF/VHF NR	
E23	EYF52BC	FUSE HOLDER	
E25	VEKS5628	DISPLAY TUBE/INFRARED RECEIVER UNIT	

11.3.3. OPERATION I C.B.A.■

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D7801	MA4051-M	ZENER 5.1V	
	OR 04AZ5.1ZTPA7	ZENER 5.1V	
D7802	MA4051-M	ZENER 5.1V	
	OR 04AZ5.1ZTPA7	ZENER 5.1V	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R7801	ERDS2TJ750	75	
R7802	ERDS2T0	0	●
R7803	ERDS2T0	0	●

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P6302	VJSS0761	CONNECTOR 19P	

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW6301	EVQ21405R	PUSH SWITCH	
SW6303	EVQ21405R	PUSH SWITCH	
SW6305	EVQ21405R	PUSH SWITCH	
SW6306	EVQ21405R	PUSH SWITCH	

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK7801	VJHS0734	FRONT AUDIO/VIDEO JACK SOCKET	
	(A)		
	VJHS0736	FRONT AUDIO/VIDEO JACK SOCKET	
	(B)		

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
E31	VJRS0091	CONNECTION PIECE	

11.3.4. OPERATION II C.B.A.■

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P6350	VJPS0765	CONNECTOR PLUG 7P	MKA

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW6309	EVQ21405R	PUSH SWITCH	
SW6311	EVQ21405R	PUSH SWITCH	
SW6313	EVQ21405R	PUSH SWITCH	
SW6314	EVQ21405R	PUSH SWITCH	
SW6316	EVQ21405R	PUSH SWITCH	

11.3.5. Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.■

INTEGRATED CIRCUITS

Ref. No.	Part No.	Part Name & Description	Remarks
IC2601	AN3809K	IC, LINEAR CYL. DRIVE	
IC3501	AN3361SB	IC, LINEAR HEAD AMP	
IC4401	AN3328S	IC, LINEAR Hi-Fi AUDIO HEAD AMP	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R2601	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2602	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2603	ERJ6GEYJ330V	MGF CHIP 1/10W 33	
R2604	ERDS2TJ1R0	1	
R2605	ERDS2TJ1R2	1.2	
R2606	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3501	ERJ6GEYJ473V	MGF CHIP 1/10W 47K	
R3502	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3503	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3504	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3505	ERJ6GEYJ560V	MGF CHIP 1/10W 56	
R3506	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R3507	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4405	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4406	ERJ6GEYJ180V	MGF CHIP 1/10W 18	
R4407	ERJ6GEYJ561V	MGF CHIP 1/10W 560	
R4410	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	
R4411	ERJ6GEYJ102V	MGF CHIP 1/10W 1K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C2604	ECUV1E104KBN	C CHIP 25V 0.1	
C2605	ECUV1E104KBN	C CHIP 25V 0.1	
C2606	ECUV1E104KBN	C CHIP 25V 0.1	
C2607	ECUV1E104KBN	C CHIP 25V 0.1	
C2608	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2609	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2610	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C2611	ECUV1E333KBN	C CHIP 25V 0.033	
C2612	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C2613	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2614	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C2615	ECEA1EKA4R7	ELECTROLYTIC 25V 4.7	
C3504	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3505	ECEA1CKA470	ELECTROLYTIC 16V 47	
C3506	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3507	ECUV1H102KBN	C CHIP 50V 1000P	
C3508	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3511	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3512	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3513	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3519	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3520	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3523	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3524	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3528	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3529	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C3532	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C3533	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4401	ECUV1H102KBN	C CHIP 50V 1000P	
C4402	ECUV1H102KBN	C CHIP 50V 1000P	
C4405	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4406	ECUV1H472KBN	C CHIP 50V 4700P	
C4408	ECEA1CKA100	ELECTROLYTIC 16V 10	
C4409	ECUV1H103ZFN	C CHIP +80%-20% 50V 0.01	
C4411	ERJ6GEY0R00V	MGF CHIP 1/10W 0	●
C4412	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4413	ECUV1E104ZFN	C CHIP +80%-20% 25V 0.1	
C4414	ECEA0JKA470	ELECTROLYTIC 6.3V 47	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L3501	ELESN101KA	100	
L4401	ELESN101KA	100	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P3501	VJSS0886	CONNECTOR 20P	

11.3.6. JUNCTION C.B.A.■

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R2531	ERDS2TJ270	27	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C2531	ECEA1CKA220	ELECTROLYTIC 16V 22	
C2532	ECEA1CKA220	ELECTROLYTIC 16V 22	
C2533	ECEA1CKA220	ELECTROLYTIC 16V 22	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P2531	VJSS0884	CONNECTOR 14P	

11.3.7. ELECTRICAL PARTS LOCATED ON CHASSIS

Ref. No.	Part No.	Part Name & Description	Remarks
IC2501	AN3845SC	IC, LINEAR CAP./LOADING DRIVE	
E22	VJAS0203	AC CORD W/PLUG	⚠
	OR VJAS0205	AC CORD W/PLUG	⚠

11.3.8. SUMMARY OF "E" ITEM NUMBERS

REFER TO ELECTRICAL PARTS LIST, FOR MODEL INFORMATION

Ref. No.	Part No.	Part Name & Description	Remarks
E1	VEPS6052HA	MAIN C.B.A.	RTL
E1	VEPS6055HA	MAIN C.B.A.	RTL
E4	VEPS8052A	OPERATION I C.B.A.	RTL
E4	VEPS8052B	OPERATION I C.B.A.	RTL
E5	VEPS8053A	OPERATION II C.B.A.	RTL
E6	VEPS5019A	Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.	RTL
E7	VEPS0A25A	JUNCTION C.B.A.	RTL
E21	VEQS0611	TUNER,UHF/VHF NR	
E22	VJAS0203	AC CORD W/PLUG	⚠
E22	VJAS0205	AC CORD W/PLUG	⚠
E23	EYF52BC	FUSE HOLDER	
E25	VEKS5627	DISPLAY TUBE/INFRARED RECEIVER UNIT	
E25	VEKS5628	DISPLAY TUBE/INFRARED RECEIVER UNIT	
E31	VJRS0091	CONNECTION PIECE	

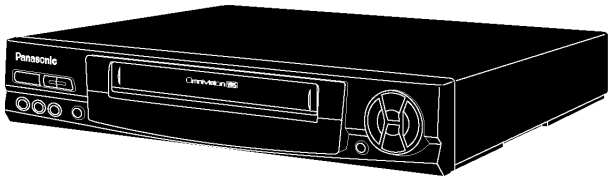
ORDER NO. MKE9901002C1
B3

Service Manual

Video Cassette Recorder

Omnivision VHS

PV-9661
PV-9662



SPECIFICATIONS

ITEM	SPECIFICATION
Power	Source: 120V AC ± 10%, 60 Hz ± 0.5%
	Consumption: Approx. 23 watts (Power on), Approx. 3.3 watts (Power off)
Video	Head: 4 rotary heads helical scanning system
	Input Level: VIDEO IN Jack (Phono type) 1.0 Vp-p 75Ω unbalanced Output Level: VIDEO OUT Jack (Phono type) 1.0 Vp-p 75Ω unbalanced Signal-to-Noise Ratio: SP: more than 43 dB LP/SLP: more than 41 dB Horizontal Resolution: Color/Monochrome: more than 230 lines
Audio	Head: Normal Mono: 1 stationary head Hi-Fi Stereo: 2 rotary heads
	Input Level: AUDIO IN Jack (Phono type) -10 dBv 50kΩ unbalanced Output Level: AUDIO OUT Jack (Phono type) -8 dBv 1kΩ unbalanced
	Frequency Response: Normal Mono: SP: 100 Hz ~ 8 kHz LP: 100 Hz ~ 6 kHz SLP: 100 Hz ~ 5 kHz Hi-Fi Stereo: SP/LP/SLP: 20 Hz ~ 20 kHz
	Signal-to-Noise Ratio: Normal Mono: SP: more than 42 dB LP/SLP: more than 40 dB Hi-Fi Stereo: SP/LP/SLP: more than 60 dB
	Wow and Flutter: Normal Mono: SP: Less than 0.2% WRMS LP: Less than 0.3% WRMS SLP: Less than 0.4% WRMS Hi-Fi Stereo: Less than 0.015% WRMS

ITEM	SPECIFICATION
RF Out	CH 3/CH 4 switchable 72 dBμ (open voltage) 75Ω unbalanced
Tuner	Broadcast Channels: VHF 2 ~ 13, UHF 14 ~ 69 CABLE Channels: Midband A through I (14 ~ 22) Superband J through W (23 ~ 36) Hyperband AA ~ EEE (37 ~ 64) Lowband A-5 ~ A-1 (95 ~ 99) Special CABLE channel 5A (01) Ultraband 65 ~ 94, 100 ~ 125
Video Signal	EIA Standard (525 lines, 60 fields) NTSC Color Signal
Tape Speed	SP: 1-5/16 i.p.s (33.35 mm/sec), LP: 21/32 i.p.s (16.67 mm/sec), SLP: 7/16 i.p.s (11.12 mm/sec) Record/Playback Time: 8 Hrs with 160 min. type tape used in SLP mode FF/REW Time: Less than 3 min. (120 min. type tape)
Tape Format	Tape width 1/2" (12.7 mm) high density tape
Operating Condition	41°F(5°C) ~ 104°F(40°C) (Temperature) 10% ~ 75% (Humidity)
Dimension	16-15/16"(430 mm) (W) X 7-13/16"(98 mm) (H) X 11-13/16"(300 mm) (D)
Weight	9.9 lbs. (4.5 kg)

Weight and dimensions shown are approximate.
Designs ans specifications are subject to change without notice.

Panasonic®

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

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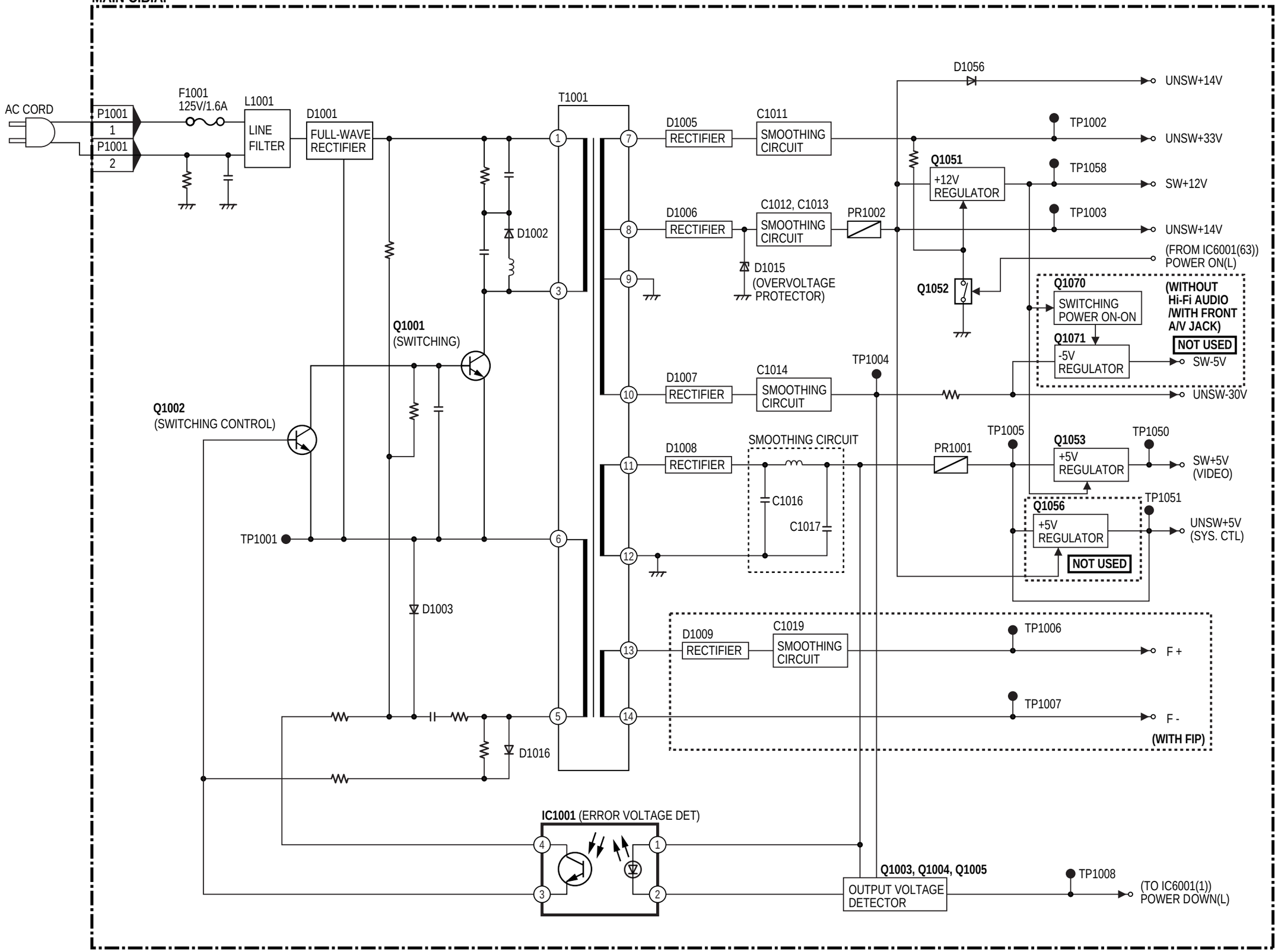
MAIN C.B.A.


AC CORD
P1001
1
P1001
2
F1001
125V/1.6A
L1001
LINE
FILTER
D1001
FULL-WAVE
RECTIFIER
T1001
D1002
Q1001
(SWITCHING)
Q1002
(SWITCHING CONTROL)
TP1001
D1003
D1016
D1005
RECTIFIER
C1011
SMOOTHING
CIRCUIT
D1006
RECTIFIER
C1012, C1013
SMOOTHING
CIRCUIT
PR1002
D1015
(OVERVOLTAGE
PROTECTOR)
D1007
RECTIFIER
C1014
SMOOTHING
CIRCUIT
TP1004
D1008
RECTIFIER
SMOOTHING CIRCUIT
C1016
C1017
PR1001
D1009
RECTIFIER
C1019
SMOOTHING
CIRCUIT
D1056
UNSW+14V
TP1002
UNSW+33V
Q1051
+12V
REGULATOR
TP1058
SW+12V
TP1003
UNSW+14V
(FROM IC6001(63))
POWER ON(L)
Q1052
Q1070
SWITCHING
POWER ON-ON
(WITHOUT
Hi-Fi AUDIO
/WITH FRONT
A/V JACK)
NOT USED
Q1071
-5V
REGULATOR
SW-5V
UNSW-30V
TP1005
Q1053
+5V
REGULATOR
TP1050
SW+5V
(VIDEO)
TP1051
Q1056
+5V
REGULATOR
NOT USED
UNSW+5V
(SYS. CTL)
TP1006
F +
TP1007
F -
(WITH FIP)
IC1001 (ERROR VOLTAGE DET)
Q1003, Q1004, Q1005
OUTPUT VOLTAGE
DETECTOR
TP1008
(TO IC6001(1))
POWER DOWN(L)

MAIN C.B.A.

REC VIDEO SIGNAL

PB VIDEO SIGNAL

UHF/VHF TUNER/TV DEMODULATOR UNIT

RF

17 VIDEO VIDEO 2

J6003

(WITH 2 HEAD) NOT USED

(FROM IC6001(23)) HEAD SW PULSE

(WITH 4 HEAD)

(FROM IC6001(98)) ROTARY SW

(TO IC6001(84)) ENVELOPE VOLTAGE

(WITH QUASI S-VHS) NOT USED

IC3101

CCD 1H DELAY

5 4

Q3151 BUFFER

Q3150 S-VHS PEAKING AMP

IC3001 (VIDEO PROCESS)

29 27 49 40 50

AT ENVELOPE DETECT

S-VHS

VIDEO IN 1

20 TUNER

18

16 LINE 1

LINE 2

REC

PB

REC/PB CHROMINANCE SIGNAL PROCESS

REC PB VHS PB-Y

46

REC PB

REC-Y

Y/C MIX

45 41

TP3002

P3001 11

REC PB

REC-C

PB PB-C

34

OPERATION I C.B.A.

VIDEO IN 2

P6301 4 P6321 4

(WITH FRONT A/V JACK) NOT USED

OPERATION I C.B.A.

VIDEO IN 2

P6302 6 P6320 6

(WITH FRONT A/V JACK)

REC PB

Y/C MIX ART V/H MIX

I²C CONTROL

13 25 10 12 1 3 7 8

(FROM IC6001(24)) V-LOCK PULSE

1 8 IC3101

CCD 1H DELAY

(TO/FROM IC6001(17)) I²C SERIAL DATA

(FROM IC6001(18)) I²C SERIAL CLOCK

IC3201

1 CCD 1H DELAY 8

Q3202 AMP

Q3201 PHASE COMPENSATOR

R3205 CNR GAIN

R3204 CNR PHASE

(WITH CNR) NOT USED

(WITH ADVANCE)

Q3875 BUFFER

(TO IC3801(33)) VIDEO

IC6001

49 OSD CHARACTER MIX 47

Q3001 BUFFER

TP3001

VIDEO OUT

HEAD AMP C.B.A. (FOR 4HEAD MODEL)

IC3501 (HEAD AMP)

TP3501

SP 18

LP/SLP 16

P3501 11 30

REC PB

4 6 13 11

L R

SP LP/SLP

P3503 6 VIDEO SP L HEAD

P3503 5 VIDEO SP R HEAD

P3503 4

P3503 1 VIDEO LP/SLP L HEAD

P3503 2 VIDEO LP/SLP R HEAD

P3503 3

31 32 1

(FROM IC6001(23)) HEAD SW PULSE

(FROM IC6001(99)) HEAD AMP SW

(FROM IC6001(62)) PB(L)

HEAD AMP C.B.A. (FOR 2HEAD MODEL) NOT USED

IC3501 (HEAD AMP)

TP3501

18

P3501 11 30

REC PB

6 4

L R

P3503 1 VIDEO L HEAD

P3503 2 VIDEO R HEAD

P3503 3

31 1

(FROM IC6001(23)) HEAD SW PULSE

(FROM IC6001(62)) PB(L)

MAIN C.B.A.

REC AUDIO SIGNAL

PB AUDIO SIGNAL

UHF/VHF TUNER/TV
DEMODULATOR UNIT

RF

14 AUDIO

AUDIO 1

(WITHOUT Hi-Fi AUDIO)

C4018

R4018

NOT USED

Q4001

+5V

Q4002

Q4003

IC3001 (AUDIO PROCESS)

56

NOT USED

(WITHOUT FRONT A/V JACK
/WITHOUT Hi-Fi AUDIO)

71

TUNER

AGC DET

REC-OFF

AUDIO
IN 1

J4002

73

LINE

PB

AGC

REC
AMP

REC-ON

65

MUTE

(WITH FRONT A/V JACK
/WITHOUT Hi-Fi AUDIO)

NOT USED

IC4151

13 LINE1

14

12 LINE2

11

57

58

PB
AMP

60

LINE
AMP

AUDIO
MUTE(H)

I²C
CONTROL

69

75

7

8

(FROM IC6001(19))
INPUT SELECT 2

OPERATION I C.B.A.

AUDIO
IN 2

P6301 P6321
2 2

(TO/FROM IC6001(17))
I²C SERIAL DATA
(FROM IC6001(18))
I²C SERIAL CLOCK

(FROM IC6001(6))
AUDIO MUTE(H)

(WITH Hi-Fi AUDIO)

(FROM IC4201(61))
NORMAL AUDIO

(TO IC4201(62))
NORMAL AUDIO

(TO IC3801(3))
AUDIO

(WITH ADVANCE)

OPERATION I C.B.A.

AUDIO
IN 2

P6302 P6320
1 1

J4003

Q4006

Q4004

DRIVE

AUDIO
OUT

J4001

R4013

(WITHOUT Hi-Fi AUDIO)

NOT USED

BIAS OSC
T4101, **Q4101**

LOADING MOTOR
P.C.B.

AUDIO CONTROL
HEAD UNIT

P6002	P2552	P2551	P1541	
6	6	4	4	AUDIO HEAD
5	5	3	3	
3	3	1	1	AUDIO ERASE HEAD
4	4	2	2	

FULL ERASE HEAD UNIT

P4001	PIN	
2	2	FULL ERASE HEAD
1	1	

MAIN C.B.A.

REC AUDIO SIGNAL

PB AUDIO SIGNAL

UHF/VHF TUNER/TV DEMODULATOR UNIT

RF

SIF OUT 15

AUDIO 14

AUDIO 1

R7007 INPUT LELVEL **NOT USED**

(TO IC6001(85)) MTS MODE

(TO IC6001(60)) AUDIO DEFEAT(H)

(TO IC6001(29)) Hi-Fi PB(H)

(WITH SPATIALIZER) **NOT USED**

TO/FROM SPATIALIZER

PIN 1

PIN 3

PIN 5

PIN 7

IC4201 (Hi-Fi AUDIO PROCESS)

56 45 28

FL4901

3 4.5MHz BPF 1

48

MTS/SAP SIGNAL PROCESS

MATRIX

MUTE CONTROL

ENV DETECTOR

TUNER

LINE1 (R-CH)

LINE2

9

10

61

R

L+R

L

MUTE

Hi-Fi

MIX

NORMAL

NORMAL

MIX

Hi-Fi

TP4204

TP4203

TP4202

TP4201

AUDIO IN1 R-CH

AUDIO IN1 L-CH

AUDIO OUT R-CH

AUDIO OUT L-CH

(WITHOUT SPATIALIZER)

J4202

J4201

(R-CH) 53

(L-CH) 57

59

R-CH Hi-Fi AUDIO SIGNAL PROCESS

L-CH Hi-Fi AUDIO SIGNAL PROCESS

+ 29

30

27

TP4205

TP4207

P3001 19

P3001 17

P3001 20

Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.

IC4401 (Hi-Fi AUDIO HEAD AMP)

AGC DET

AGC AMP

REC AMP

PRE AMP

PRE AMP

P3501 19

P3501 17

P3501 20

13

14

7

3

5

1

16

L

R

P3501 20

P3501 20

P3501 20

Hi-Fi AUDIO L HEAD

Hi-Fi AUDIO R HEAD

(FROM IC6001(30)) VIDEO DELAY REC(H)

(WITH FRONT A/V JACK)

OPERATION I C.B.A.

AUDIO IN 2 R-CH P6302 4 P6320 4

AUDIO IN 2 L-CH P6302 1 P6320 1

OPERATION I C.B.A.

AUDIO IN 2 R-CH P6301 2 P6321 2

AUDIO IN 2 L-CH P6301 1 P6321 1

NOT USED

(WITH FRONT A/V JACK)

AUDIO MUTE(H) 36

62

I²C CONTROL

42 43

(TO IC3001(73)) NORMAL AUDIO

(FROM IC6001(6)) AUDIO MUTE(H)

Q4004 DRIVE

(TO/FROM IC6001(17)) I²C SERIAL DATA

(FROM IC6001(18)) I²C SERIAL CLOCK

(FROM IC3001(69)) NORMAL AUDIO

(FROM IC6001(27)) Hi-Fi HEAD SW PULSE

Q4005 **Q4006** **Q4007**

CAPSTAN STATOR UNIT

JUNCTION C.B.A.

MAIN C.B.A.

IC2501 (LOADING MOTOR DRIVE)

LOADING MOTOR DRIVE

15 P2502 12 — P2532 12 — P2531 8 — P6201 8 — 8 LOADING MOTOR FORWARD(H)

16 P2502 13 — P2532 13 — P2531 7 — P6201 7 — 7 LOADING MOTOR REVERSE(H)

19 P2502 18 — P2532 18 — P2531 1 — P6201 1

21 P2502 15 — P2532 15 — P2531 3 — P6201 3

J6004 J6005

LOADING MOTOR P.C.B.

LOADING MOTOR (+) M (-) — P2552 1 — P2552 2 — P6002 1 — P6002 2

IC6001 (SYSTEM CONTROL MICROCONTROLLER)

VDD 36 +5V

MODE SW POSITION C 95 — 4

MODE SW POSITION B 96 — 3

MODE SW POSITION A 97 — 2

1

SW6002 (MODE SELECT SWITCH)

PIN NO. OF IC6001 / MODE	A (97)	B (96)	C (95)
FF/REW	H	H	L
BRAKE	L	H	H
PLAY/CUE/SLOW/STILL	L	H	L
REVIEW	H	L	L
STANDBY/STOP	H	L	H
CASSETTE DOWN	L	L	H
EJECT	L	L	L

Q6001,Q6005, Q6006,Q6007

+5V

(FROM POWER SUPPLY CIRCUIT) POWER DOWN (L)

RESET — 25 RESET

U6301 IR RECEIVER

IR DATA 5

TP6001

+5V

83 TAKEUP REEL PULSE/SERVICE(L)

82 SUPPLY REEL PULSE

81 TAKEUP PHOTO TR

80 SUPPLY PHOTO TR

I²C SERIAL DATA 17 — (TO/FROM IC3001(8)) I²C SERIAL DATA

I²C SERIAL CLOCK 18 — (TO IC3001(7)) I²C SERIAL CLOCK

(TO/FROM IC4201(43)) I²C SERIAL DATA

(TO IC4201(42)) I²C SERIAL CLOCK

(WITH Hi-Fi AUDIO)

SW+12V

SW+5V

D6001 SENSOR LED

Q6010 (TAKEUP PHOTO TR)

Q6009 (SUPPLY PHOTO TR)

IC6002 (TAKEUP REEL SENSOR)

IC6003 (SUPPLY REEL SENSOR)

X6001 (14.3MHz)

OSC — 38 OSC 1 — 37 OSC 2

SW6001 SAFETY TAB SW — 31 SAFETY TAB BROKEN(H)

(TO IC3501(25)) DELAY REC+12V

(TO IC4401(16)) Hi-Fi DELAY REC(H)

(WITH Hi-Fi AUDIO)

Q6002 — SW+12V

Q6003 — 30 VIDEO DELAY REC(H)

AUDIO CONTROL HEAD UNIT

LOADING MOTOR P.C.B.

MAIN C.B.A.

CONTROL HEAD

P1541 5 / P1541 6

P2551 5 / P2551 6

P2552 8 / P2552 7

P6002 8 / P6002 7

TP6206

IC6001 (SERVO MICROCONTROLLER)

75 REC CTL AMP

74 PB-ON

NEGATIVE PB CTL SLICER

+5V

72

69

70

TP6207

76 POSITIVE PB CTL SLICER

1/2 Vcc

21 CAP DIRECTION CTL

SELECT

TP6203

67 SCHMIT

COUNT DOWN

68 AMP

TP6209

INTEGRATION

33

TP6201

PG SELECT

PWM

CAPSTAN SPEED COMPENSATOR

MIX

CYLINDER/ CAPSTAN PHASE COMPENSATOR

MIX

PWM

CYLINDER SPEED COMPENSATOR

REC CTL / TR MM GENERATOR

ENVELOPE DETECTOR

84 TP6003 (FROM IC3001(40)) ENVELOPE VOLTAGE

V-LOCK PULSE GENERATOR

24 (TO IC3001(13)) V-LOCK PULSE

TP6205

23 (TO IC3501(1)) HEAD SW PULSE

CAPSTAN STATOR UNIT

JUNCTION C.B.A.

CAPSTAN COIL

P2502 4 / P2532 4

P2502 2 / P2532 2

P2502 21 / P2532 21

IC2501 (CAPSTAN MOTOR DRIVE)

Q2501 HALL TRANSIS-TOR 4 3

Q2502 HALL TRANSIS-TOR 6 5

Q2503 HALL TRANSIS-TOR 2 1

POSITION SIGNAL PROCESS

CAPSTAN MOTOR DRIVE

DIFFER-ENTIAL AMP

25 P2502 20 / P2532 20

24 P2502 1 / P2532 1

22 P2502 3 / P2532 3

10 P2502 10 / P2532 10 / P2531 10 / P6201 10

7 P2502 11 / P2532 11 / P2531 9 / P6201 9

12 P2502 8 / P2532 8 / P2531 12 / P6201 12

FG HEAD

P2502 7 / P2532 7 / P2531 13 / P6201 13

GND

HEAD AMP C.B.A.

IC2601 (CYLINDER MOTOR DRIVE)

HALL IC

P3502 4 / P3502 6 / P3502 3 / P3502 2 / P3502 1

7 PG/FG PULSE GENERATOR

6

1

2

16

CYLINDER MOTOR DRIVE

4 P3501 1 / P3001 1

9 P3501 3 / P3001 3

CYLINDER MOTOR

TP6208

INTEGRATION

TP6202

65 PG/ FG SEPARATOR

HEAD SW SIGNAL GENERATOR

22 FORCED ACCELERATION

34

20 CAP TORQUE LIMIT

SLOW /STILL CONTROL

(WITH 4 HEAD)

HEAD AMP CONTROL

ROTARY SIGNAL GENERATOR

98 (TO IC3001(49)) ROTARY SW

HEAD AMP SELECT SIGNAL GENERATOR

99 (TO IC3501(32)) HEAD AMP SW

100 (FROM IC3501(33)) ENVELOPE DET

MAIN C.B.A.

OUT / IN	SCAN 1 PIN 93	SCAN 2 PIN 94
DATA 8 PIN 4	——	STOP /EJECT
DATA 9 PIN 26	——	FF /CUE
DATA 10 PIN 40	CH DOWN	REW /REV
DATA 11 PIN 41	CH UP	——
DATA 12 PIN 45	POWER	REC /TIME
DATA 13 PIN 46	TV/VCR	——

IN

OUT

IC6001
(SYSTEM CONTROL MICROCONTROLLER)

4 KEY DATA 8
26 KEY DATA 9
40 KEY DATA 10
41 KEY DATA 11
45 KEY DATA 12
46 KEY DATA 13
93 SCAN 1
94 SCAN 2
55 CATV SCK

IC6301 CS (L) 57
SERIAL DATA 0 13
SERIAL CLOCK 1 11
SERIAL DATA 1 12
IC6301 RESET (L) 56

IC6301 (INDICATOR PANEL CONTROL) **(PV-9661)**

22 IC6301 CS (L)
24 SERIAL DATA 0
26 SERIAL CLOCK 1
25 SERIAL DATA 1
15 IC6301 RESET (L)

GRID 1G 3 … GRID 6G 8
SEGMENT a 33 … SEGMENT f 38 … SEGMENT g 41 … SEGMENT j 44 … SEGMENT k 1 … SEGMENT l 2

GRID
SEGMENT

DISPLAY TUBE
FIP

X6301
8MHz
X IN 13
X OUT 14

OPERATION I C.B.A.

IC6401 (CATV CONTROL)

CATV CS (L) 15
CATV DATA 16
CATV SCK 3
IR CODE 8
VDD 9
RESET 13
X IN 11
X OUT 10

P6302 16 / P6320 16
P6302 15 / P6320 15
P6302 14 / P6320 14

D6402 INFRARED LED
Q6401
D6403 INFRARED LED
D6401 INFRARED LED
+14V
+5V

IC6402
RESET
X6401 (4MHz)
OSC

(WITH CABLE BOX CONTROL)
NOT USED

IC6301 (INDICATOR PANEL CONTROL) **(PV-9662)**

16 IC6301 CS (L)
9 SERIAL DATA 1
10 SERIAL DATA 0
8 SERIAL CLOCK 1
19 IC6301 RESET (L)

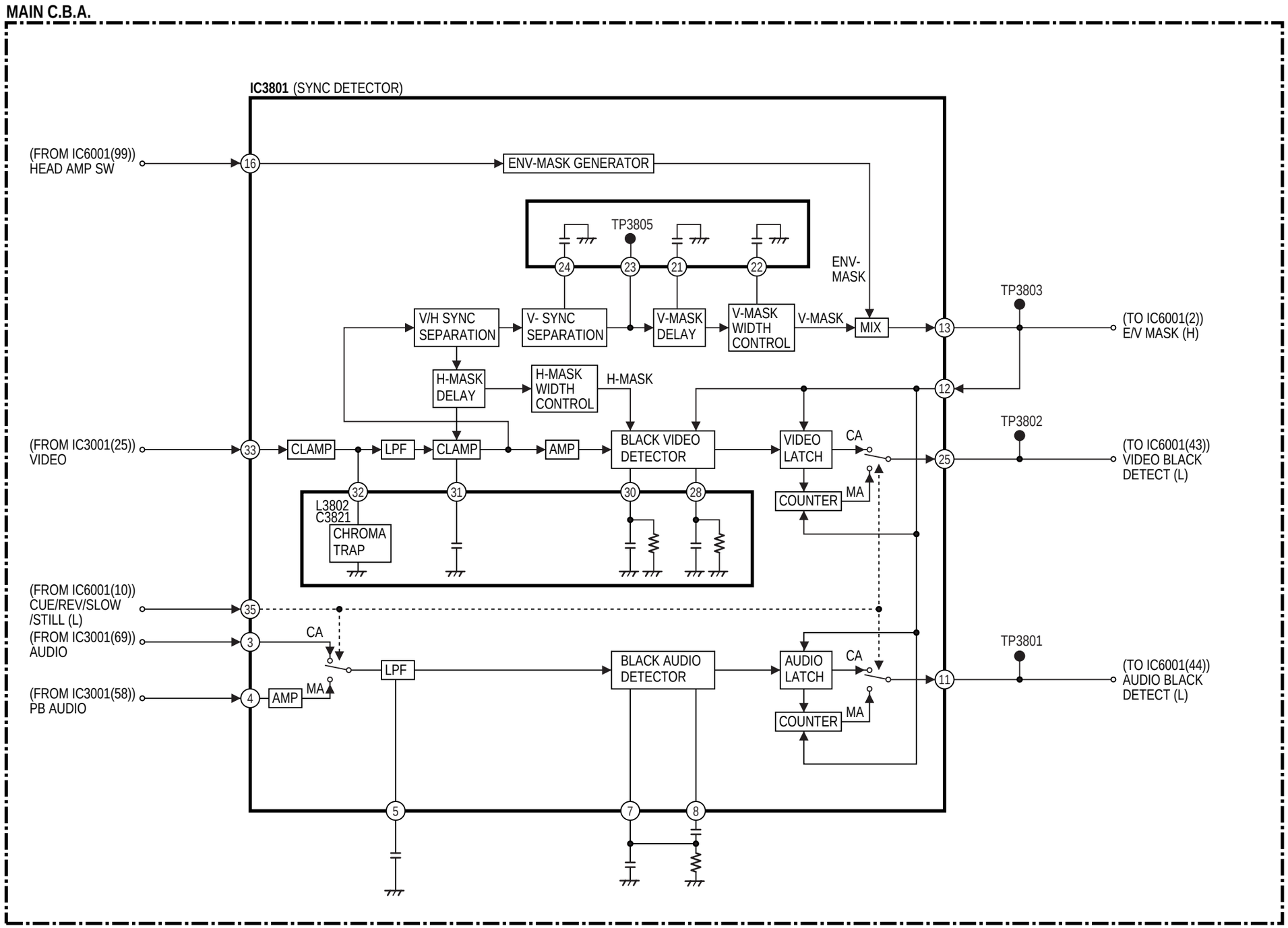
GRID 1G 46 … GRID 11G 56
SEGMENT a 31 … SEGMENT o 45

GRID
SEGMENT

DISPLAY TUBE
FIP

X6301
4MHz
X IN 22
X OUT 23

MAIN C.B.A.


IC3801 (SYNC DETECTOR)
(FROM IC6001(99))
HEAD AMP SW
16
ENV-MASK GENERATOR
TP3805
24
23
21
22
ENV-
MASK
TP3803
V/H SYNC
SEPARATION
V- SYNC
SEPARATION
V-MASK
DELAY
V-MASK
WIDTH
CONTROL
V-MASK
MIX
13
(TO IC6001(2))
E/V MASK (H)
H-MASK
DELAY
H-MASK
WIDTH
CONTROL
H-MASK
12
TP3802
(FROM IC3001(25))
VIDEO
33
CLAMP
LPF
CLAMP
AMP
BLACK VIDEO
DETECTOR
VIDEO
LATCH
CA
25
(TO IC6001(43))
VIDEO BLACK
DETECT (L)
32
31
30
28
L3802
C3821
CHROMA
TRAP
COUNTER
MA
(FROM IC6001(10))
CUE/REV/SLOW
/STILL (L)
35
(FROM IC3001(69))
AUDIO
3
CA
TP3801
LPF
BLACK AUDIO
DETECTOR
AUDIO
LATCH
CA
11
(TO IC6001(44))
AUDIO BLACK
DETECT (L)
(FROM IC3001(58))
PB AUDIO
4
AMP
MA
COUNTER
MA
5
7
8

CM Advance Section

HOW TO CONFIRM IF CM ADVANCE CIRCUIT IS WORKING.

Record any broadcast including commercial over 30 seconds. Then, as recording continues, proceed with all troubleshooting of CM Advance Circuit.

START

Confirm if control pulse at Pin 5 of P1541 on A/C Head unit changes as shown in Fig.1 when the black portion(No video & No audio) at both the beginning and end of a commercial appears on TV.

NG → Perform the "TROUBLESHOOTING OF CM ADVANCE."

OK

CM Advance circuit works OK.

Control Pulse at Pin 5 of P1541 on AC Head Unit

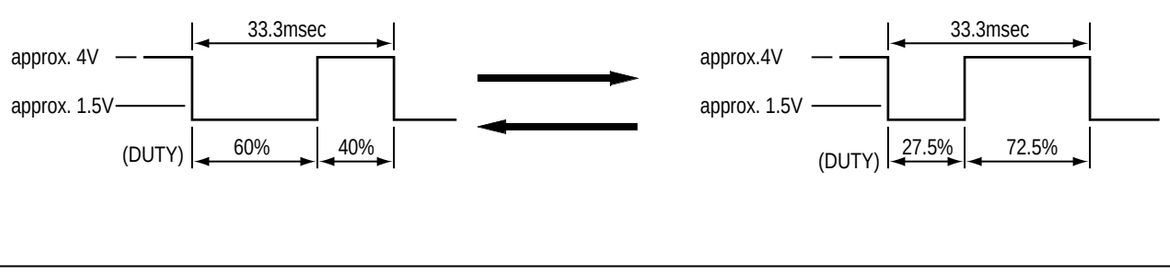


Fig.1

TROUBLESHOOTING OF CM ADVANCE

Confirmation of Audio signal

Confirm if the signal at TP3801 becomes LOW when the black portion (no audio) at both the beginning and end of a commercial appears on TV.

NG → Check IC3801 and parts surrounding Pin 3, 4, 5, 7 and 8 of IC3801.Replace if necessary.

OK

Confirm if the signal at Pin 44 of IC6001 becomes LOW when the black portion (no audio) at both he beginning and end of a commercial appears on TV.

NG → Check signal line between Pin 44 of IC6001 and Pin 11 of IC3801.

OK

Confirmation of Video signal

Confirm if the signal at TP3802 becomes LOW when the black portion (no video) at both the beginning and end of a commercial appears on TV.

NG → Check IC3801 and parts surrounding Pin 28 and 30 of IC3801.Replace if necessary.

OK

Confirm if the signal at Pin 43 of IC6001 becomes LOW when the black portion (no video) at both the beginning and end of a commercial appears on TV.

NG → Check signal line between Pin 43 of IC6001 and Pin 25 of IC3801.

OK

Check IC6001.
Replace if necessary.

Confirmation of E/V Mask pulse

Is E/V Mask pulse at TP3803 correct as shown in Fig.2?

NG → Is there the video signal at Pin 33 of IC3801?

OK → Check IC3801 and parts surrounding Pin 21, 22, 31, 32, and 33 of IC3801.Replace if necessary.

NG → Check signal line between Pin 25 of IC3001 and Pin 33 of IC3801.

OK

Is E/V Mask pulse at Pin 2 of IC6001 correct as shown in Fig.2?

NG → Check signal line between Pin2 of IC6001 and Pin 13 of IC3801.

OK

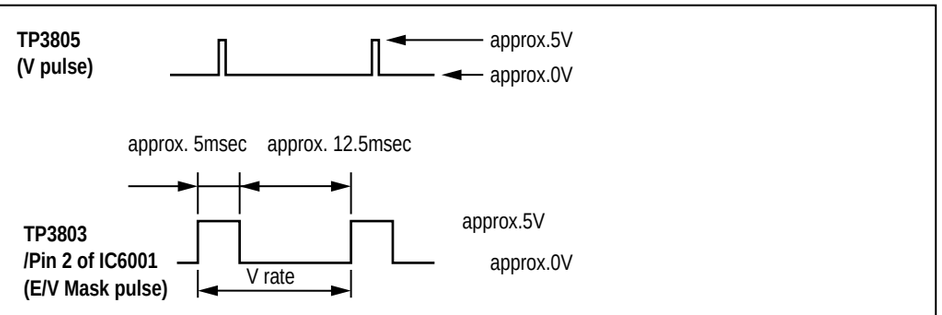
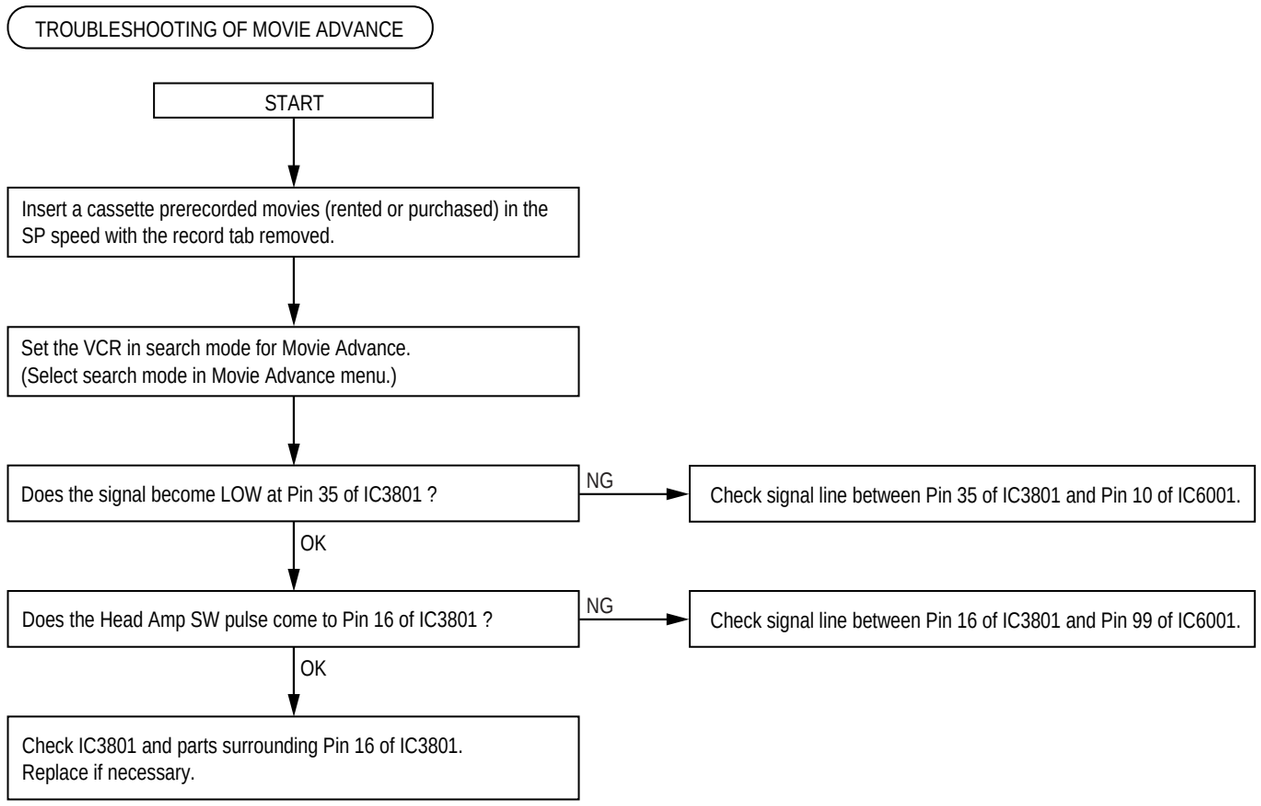


Fig.2

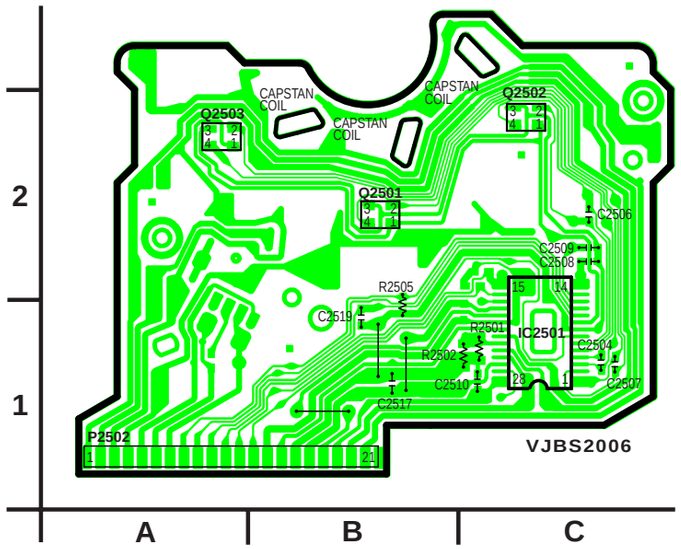
Movie Advance Section

Confirm if CM Advance Circuit works as shown in "HOW TO CONFIRM IF CM ADVANCE CIRCUIT IS WORKING." before performing "TROUBLESHOOTING OF MOVIE ADVANCE."
If NG, perform the "TROUBLESHOOTING OF CM ADVANCE." first.
If OK, perform following steps.

HOW TO CONFIRM IF MOVIE ADVANCE CIRCUIT IS WORKING.


TROUBLESHOOTING OF MOVIE ADVANCE
START
Insert a cassette prerecorded movies (rented or purchased) in the SP speed with the record tab removed.
Set the VCR in search mode for Movie Advance. (Select search mode in Movie Advance menu.)
Does the signal become LOW at Pin 35 of IC3801 ?
NG
Check signal line between Pin 35 of IC3801 and Pin 10 of IC6001.
OK
Does the Head Amp SW pulse come to Pin 16 of IC3801 ?
NG
Check signal line between Pin 16 of IC3801 and Pin 99 of IC6001.
OK
Check IC3801 and parts surrounding Pin 16 of IC3801. Replace if necessary.

CAPSTAN STATOR UNIT



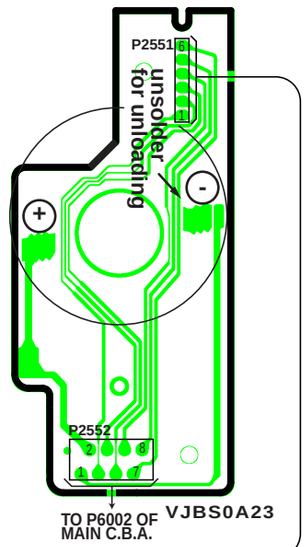
NOTE:

1. CAPSTAN STATOR UNIT IS SUPPLIED AS A CAPSTAN STATOR KIT ONLY. HOWEVER, IC2501(AN3845SC) IS AVAILABLE SEPARATERY AS A REPLACEMENT PART.
2. WHEN INSTALLING THE IC2501 OR CAPSTAN STATOR UNIT, BE SURE TO APPLY SILICON GREASE(VFK1301). REFER TO "CAPSTAN STATOR UNIT" OF "DISASSEMBLY/ASSEMBLY PROCEDURES OF MACHANISM" SECTION.

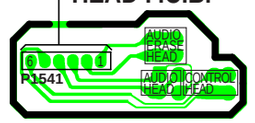
NOTE:

FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

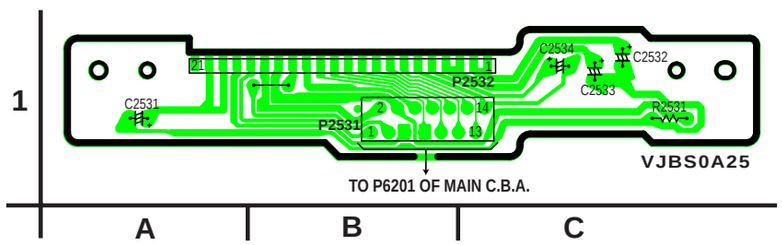
LOADING MOTOR P.C.B.



AUDIO CONTROL HEAD P.C.B.

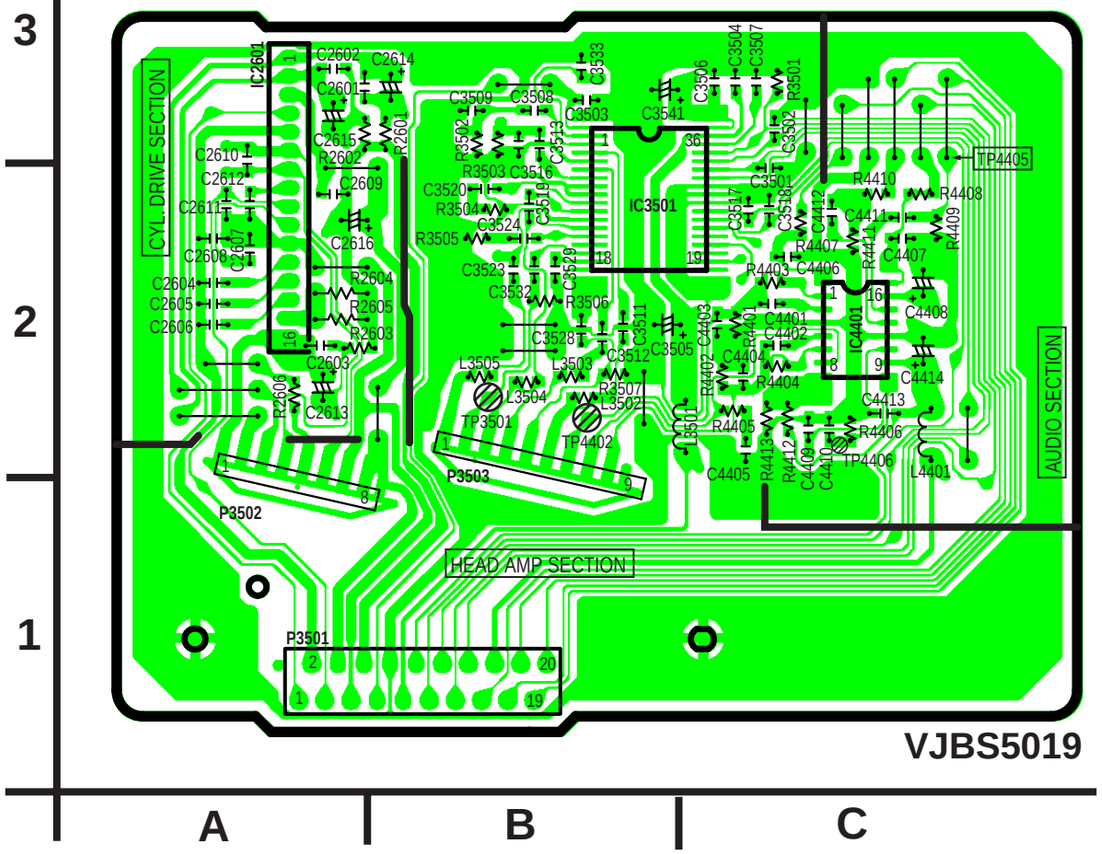


JUNCTION C.B.A. VEPS0A25A



NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.



Hi-Fi AUDIO/VIDEO HEAD AMP	
IC	
IC2601	A-3
IC3501	B-2
IC4401	C-2
CONNECTOR	
P3501	A-1
P3502	A-1
P3503	B-1
TEST POINT	
TP3501	B-2
TP4402	B-2
TP4405	C-3
TP4406	C-2

LEADLESS COMPONENT PARTS LOCATION GUIDE
Hi-Fi AUDIO/VIDEO HEAD AMP C.B.A.

R2601	B-3	R4409	C-2	C3503	B-3	C3533	B-3
R2602	A-3	R4410	C-2	C3504	C-3	C4401	C-2
R2603	A-2	R4411	C-2	C3506	C-3	C4402	C-2
R2606	A-2	R4412	C-1	C3507	C-3	C4403	C-2
R3501	C-3	R4413	C-1	C3508	B-3	C4404	C-2
R3502	B-3	C2601	A-3	C3509	B-3	C4405	C-2
R3503	B-2	C2602	A-3	C3511	B-2	C4406	C-2
R3504	B-2	C2603	A-2	C3512	B-2	C4407	C-2
R3505	B-2	C2604	A-2	C3513	B-3	C4409	C-1
R3506	B-2	C2605	A-2	C3516	B-2	C4410	C-1
R3507	B-2	C2606	A-2	C3517	C-2	C4411	C-2
R4401	C-2	C2607	A-2	C3518	C-2	C4412	C-2
R4402	C-2	C2608	A-2	C3519	B-2	C4413	C-2
R4403	C-2	C2609	A-2	C3520	B-2	L3502	B-2
R4404	C-2	C2610	A-3	C3523	B-2	L3503	B-2
R4405	C-2	C2611	A-2	C3524	B-2	L3504	B-2
R4406	C-2	C2612	A-2	C3528	B-2	L3505	B-2
R4407	C-2	C3501	C-2	C3529	B-2		
R4408	C-2	C3502	C-3	C3532	B-2		

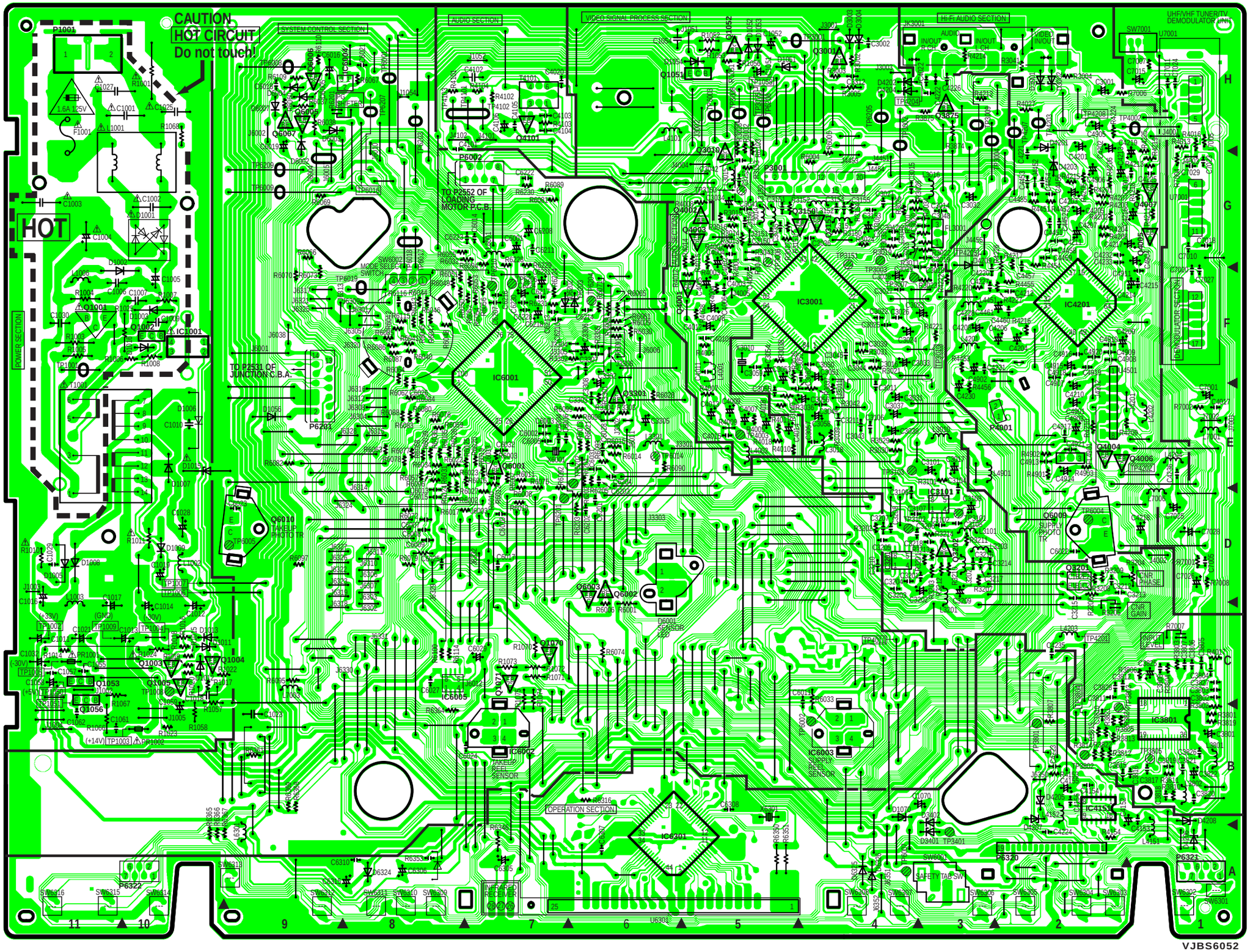
CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.6A 125V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D'T INCENDIE N'I UTILISERQUE DES FUSIBLE DE MÉME
TYPE 1.6A 125V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.



COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPONENT PARTS LOCATION GUIDE
MAIN C.B.A.

MAIN

TRANSISTOR

Q1001	F-11
Q1002	F-10
Q1003	C-10
Q1004	C-9
Q1005	C-10
Q1051	H-6
Q1052	H-5
Q1053	C-11
Q1056	B-11
Q1070	C-7
Q1071	C-7
Q3001	H-4
Q3010	H-5
Q3150	G-5
Q3151	G-4
Q3201	D-2
Q3202	D-3
Q3301	E-6
Q3875	H-3
Q4001	F-6
Q4002	G-6
Q4003	G-5
Q4004	E-2
Q4005	G-1
Q4006	E-1
Q4007	G-1
Q4101	H-7
Q6001	E-7
Q6002	D-6
Q6003	D-6
Q6005	H-9
Q6006	H-9
Q6007	H-9
Q6009	D-2
Q6010	D-9

MAIN

IC

IC1001	F-10
IC3001	F-4
IC3101	D-3
IC3201	D-4
IC3801	B-1
IC4151	B-2
IC4201	F-2
IC6001	F-7
IC6002	B-7
IC6003	B-4
IC6004	H-8
IC6005	C-8
IC6301	A-6

MAIN

CONNECTOR

P1001	H-11
P3001	G-5
P4001	E-3
P6002	G-8
P6201	E-9
P6320	A-2
P6321	A-1
P6322	A-10

MAIN

ADJUSTMENT

R3204	D-1
R3205	C-2
R6201	H-9
R7007	C-1

MAIN

TEST POINT

TP1001	F-11
TP1002	C-11
TP1003	B-11
TP1004	C-10
TP1005	C-11
TP1006	D-10
TP1007	D-10
TP1008	C-10
TP1009	C-11
TP1050	C-11
TP1051	C-11
TP1058	H-5
TP3001	H-4
TP3002	H-4
TP3003	F-4
TP3004	G-2
TP3005	H-5
TP3006	F-5
TP3007	F-4
TP3008	H-5
TP3009	H-3
TP3010	F-3
TP3101	D-3
TP3102	D-4
TP3103	E-4
TP3150	G-5
TP3151	G-4
TP3401	A-3
TP3801	B-2
TP3802	B-2
TP3803	C-1
TP3804	B-2
TP3805	B-1
TP4002	H-2
TP4003	E-5

MAIN

TEST POINT

TP4011	C-4
TP4101	H-8
TP4102	H-7
TP4103	H-8
TP4201	C-2
TP4202	E-1
TP4203	H-2
TP4204	H-4
TP4205	G-3
TP4207	H-2
TP4208	H-2
TP6001	H-8
TP6002	B-4
TP6003	H-5
TP6004	D-2
TP6005	D-9
TP6007	A-4
TP6008	H-9
TP6009	G-9
TP6014	E-6
TP6016	G-8
TP6017	F-8
TP6018	F-8
TP6019	F-9
TP6201	D-7
TP6202	E-6
TP6203	G-8
TP6204	F-6
TP6205	H-4
TP6206	F-7
TP6207	H-8
TP6208	H-5
TP6209	G-9
TP6210	F-7

LEADLESS COMPONENT PARTS LOCATION GUIDE
MAIN C.B.A.

Q1003	C-10	R3027	G-5	R3822	B-2	R4454	G-2	R6057	E-8	R6230	G-7	C3106	E-4	C4006	F-5	C6003	E-7
Q1004	C-9	R3028	H-5	R3875	H-3	R4455	F-2	R6058	E-8	R6231	F-7	C3107	D-4	C4010	F-5	C6004	E-7
Q1005	C-10	R3029	E-4	R4001	F-5	R4456	E-3	R6059	E-8	R6316	B-6	C3108	D-4	C4011	F-5	C6005	E-7
Q1052	H-5	R3030	E-4	R4002	G-5	R4901	E-2	R6060	H-9	R6353	A-8	C3150	G-5	C4015	E-5	C6006	E-7
Q1070	C-7	R3031	F-4	R4003	F-5	R4902	E-2	R6061	F-6	R6361	B-9	C3151	G-5	C4017	E-1	C6007	D-8
Q1071	C-7	R3032	H-5	R4004	F-5	R4903	E-2	R6062	E-8	R6364	B-8	C3152	G-5	C4020	H-7	C6008	D-8
Q3001	H-4	R3033	G-4	R4005	E-5	R6002	D-8	R6063	E-8	R6365	B-10	C3153	G-4	C4022	H-3	C6009	D-8
Q3010	H-5	R3034	G-3	R4006	F-5	R6004	G-4	R6064	F-8	R6366	B-10	C3154	G-4	C4101	H-8	C6010	D-7
Q3150	G-5	R3035	F-5	R4007	E-5	R6005	H-4	R6065	F-6	R6367	B-9	C3155	G-4	C4103	H-7	C6011	C-5
Q3151	G-4	R3036	E-5	R4008	G-6	R6006	C-6	R6066	G-9	R6368	B-9	C3156	G-5	C4104	H-7	C6012	E-7
Q3201	D-2	R3037	E-4	R4009	E-5	R6007	D-7	R6067	H-8	R6369	B-9	C3201	D-4	C4105	H-7	C6013	D-8
Q3202	D-3	R3038	F-5	R4010	E-5	R6008	D-7	R6068	F-6	R7001	D-1	C3203	D-4	C4153	A-1	C6014	G-7
Q3301	E-6	R3039	E-4	R4011	E-5	R6010	D-7	R6069	G-9	R7002	E-1	C3204	D-4	C4154	B-2	C6015	D-8
Q3875	H-3	R3040	E-5	R4012	F-6	R6011	E-7	R6070	F-9	R7004	G-1	C3205	D-4	C4156	B-2	C6017	D-7
Q4001	F-6	R3041	H-2	R4013	H-1	R6012	E-7	R6071	F-6	R7006	H-1	C3206	D-3	C4211	G-2	C6018	H-9
Q4002	G-6	R3043	G-5	R4014	G-5	R6013	E-6	R6072	D-8	R7008	D-1	C3207	D-4	C4212	F-2	C6021	H-8
Q4003	G-5	R3044	F-5	R4015	F-5	R6014	E-6	R6073	F-9	C1010	E-10	C3208	D-4	C4215	F-1	C6022	D-2
Q4004	E-2	R3101	E-3	R4016	H-1	R6015	E-6	R6075	E-7	C1029	D-11	C3210	D-4	C4219	H-2	C6023	D-9
Q4005	G-1	R3150	G-4	R4017	C-1	R6016	E-7	R6076	E-8	C1055	C-11	C3211	E-4	C4220	F-3	C6024	B-8
Q4006	E-1	R3151	G-5	R4018	E-5	R6017	D-8	R6077	E-8	C1057	C-11	C3212	D-2	C4221	G-2	C6025	D-8
Q4007	G-1	R3152	G-5	R4027	H-2	R6018	D-7	R6078	E-8	C1061	B-11	C3213	D-1	C4222	H-3	C6026	E-8
Q4101	H-7	R3153	G-5	R4028	F-5	R6019	E-7	R6079	D-8	C1062	B-11	C3214	D-2	C4223	B-2	C6027	C-8
Q6001	E-7	R3154	G-4	R4101	H-8	R6020	E-7	R6080	E-8	C3002	H-4	C3215	C-2	C4224	A-2	C6028	E-6
Q6002	D-6	R3201	D-3	R4102	H-7	R6021	E-6	R6081	G-7	C3011	E-4	C3216	D-3	C4225	G-1	C6031	E-6
Q6003	D-6	R3202	D-4	R4103	H-7	R6022	E-8	R6082	E-9	C3014	G-3	C3217	D-3	C4226	H-3	C6032	E-7
Q6005	H-9	R3203	D-3	R4104	H-7	R6023	E-8	R6083	E-8	C3015	G-4	C3218	D-4	C4227	F-3	C6201	D-6
Q6006	H-9	R3206	C-2	R4153	B-2	R6024	D-8	R6084	E-8	C3016	F-4	C3303	E-6	C4228	F-3	C6202	D-6
Q6007	H-9	R3207	D-3	R4154	A-2	R6025	E-7	R6085	F-8	C3018	F-3	C3306	F-6	C4231	F-3	C6203	D-6
R1006	F-11	R3208	D-2	R4201	G-2	R6026	E-8	R6086	F-8	C3019	G-3	C3307	F-6	C4232	G-2	C6204	E-6
R1014	C-11	R3209	D-2	R4202	G-2	R6027	D-8	R6087	F-8	C3020	G-4	C3308	E-6	C4233	G-2	C6207	F-7
R1015	C-10	R3210	D-3	R4203	G-2	R6028	E-6	R6088	E-8	C3021	G-4	C3312	H-4	C4235	C-2	C6210	F-7
R1016	C-10	R3211	D-3	R4204	G-2	R6029	F-6	R6089	G-7	C3022	F-4	C3802	C-1	C4236	E-1	C6211	G-7
R1017	C-10	R3212	D-3	R4205	G-2	R6030	F-6	R6090	E-6	C3025	F-4	C3803	C-1	C4451	G-2	C6213	F-7
R1018	C-10	R3213	D-4	R4206	G-2	R6031	E-8	R6091	F-6	C3026	F-4	C3804	C-1	C4452	G-2	C6214	F-6
R1019	C-10	R3214	D-3	R4207	G-2	R6032	G-8	R6092	E-7	C3027	F-4	C3805	C-1	C4453	G-2	C6216	F-7
R1020	C-10	R3301	E-6	R4208	G-2	R6034	E-8	R6093	E-6	C3035	G-5	C3806	C-1	C4454	G-2	C6217	F-7
R1022	C-10	R3302	F-7	R4209	E-2	R6035	E-8	R6094	G-8	C3036	G-4	C3807	C-1	C4455	G-2	C6222	G-7
R1023	B-10	R3303	E-6	R4210	E-2	R6036	E-8	R6095	C-9	C3039	F-4	C3808	C-1	C4456	G-2	C6223	G-8
R1051	H-5	R3304	E-6	R4211	G-1	R6039	E-8	R6096	E-8	C3041	G-5	C3810	B-2	C4457	F-2	C6228	F-7
R1056	H-5	R3305	F-6	R4212	H-3	R6040	F-8	R6097	D-9	C3042	G-5	C3811	C-2	C4458	G-2	C6230	F-7
R3002	H-4	R3801	B-1	R4213	G-1	R6041	F-8	R6098	E-6	C3043	E-4	C3812	C-2	C4459	G-2	C6307	A-6
R3003	H-4	R3802	B-1	R4214	H-3	R6042	F-8	R6099	E-7	C3044	F-4	C3815	B-2	C4460	F-3	C6308	B-5
R3004	H-2	R3803	C-1	R4215	G-2	R6043	F-8	R6100	C-8	C3045	F-4	C3816	B-1	C4907	E-2	C6310	A-9
R3011	G-4	R3804	C-1	R4216	F-2	R6044	F-8	R6103	G-5	C3046	G-4	C3817	B-1	C4908	F-2	C7005	D-1
R3013	G-5	R3805	B-2	R4217	G-2	R6045	F-8	R6109	H-9	C3047	G-4	C3818	B-1	C4909	F-2	C7007	H-1
R3014	G-5	R3806	C-2	R4218	G-1	R6046	F-8	R6110	H-9	C3048	G-3	C3819	B-1	C4910	F-2	C7010	G-1
R3015	G-5	R3807	B-2	R4219	G-1	R6047	F-8	R6114	C-8	C3049	E-4	C3820	B-1	C4911	F-2	C7011	H-1
R3016	G-5	R3810	B-1	R4220	F-3	R6048	F-8	R6115	F-8	C3050	F-4	C3821	B-1	C4912	G-2	C7018	G-1
R3019	G-4	R3811	B-1	R4221	F-3	R6049	F-8	R6116	F-8	C3052	F-4	C3826	B-1	C4913	E-2	C7020	F-1
R3020	G-4	R3812	B-2	R4222	F-3	R6050	F-8	R6202	D-6	C3055	E-5	C3827	C-1	C4916	F-2	C7023	G-1
R3021	F-4	R3813	B-2	R4224	H-2	R6051	F-8	R6203	D-6	C3057	E-4	C3828	C-2	C4917	E-2	C7024	H-1
R3022	G-3	R3814	B-2	R4225	H-1	R6052	F-7	R6204	E-6	C3059	F-5	C3829	B-2	C4918	F-2	C7027	F-1
R3023	F-3	R3815	B-2	R4227	F-2	R6053	F-7	R6205	D-6	C3062	E-4	C4001	F-5	C4919	F-2	C7029	G-1
R3024	G-4	R3819	B-1	R4451	G-2	R6054	F-7	R6224	F-7	C3102	D-3	C4003	F-5	C4920	F-2	L7005	H-1
R3025	G-4	R3820	B-1	R4452	G-2	R6055	G-8	R6228	G-7	C3104	E-3	C4004	G-5	C4921	E-2		
R3026	G-4	R3821	B-2	R4453	F-3	R6056	F-7	R6229	G-7	C3105	D-3	C4005	F-5	C6002	E-7		

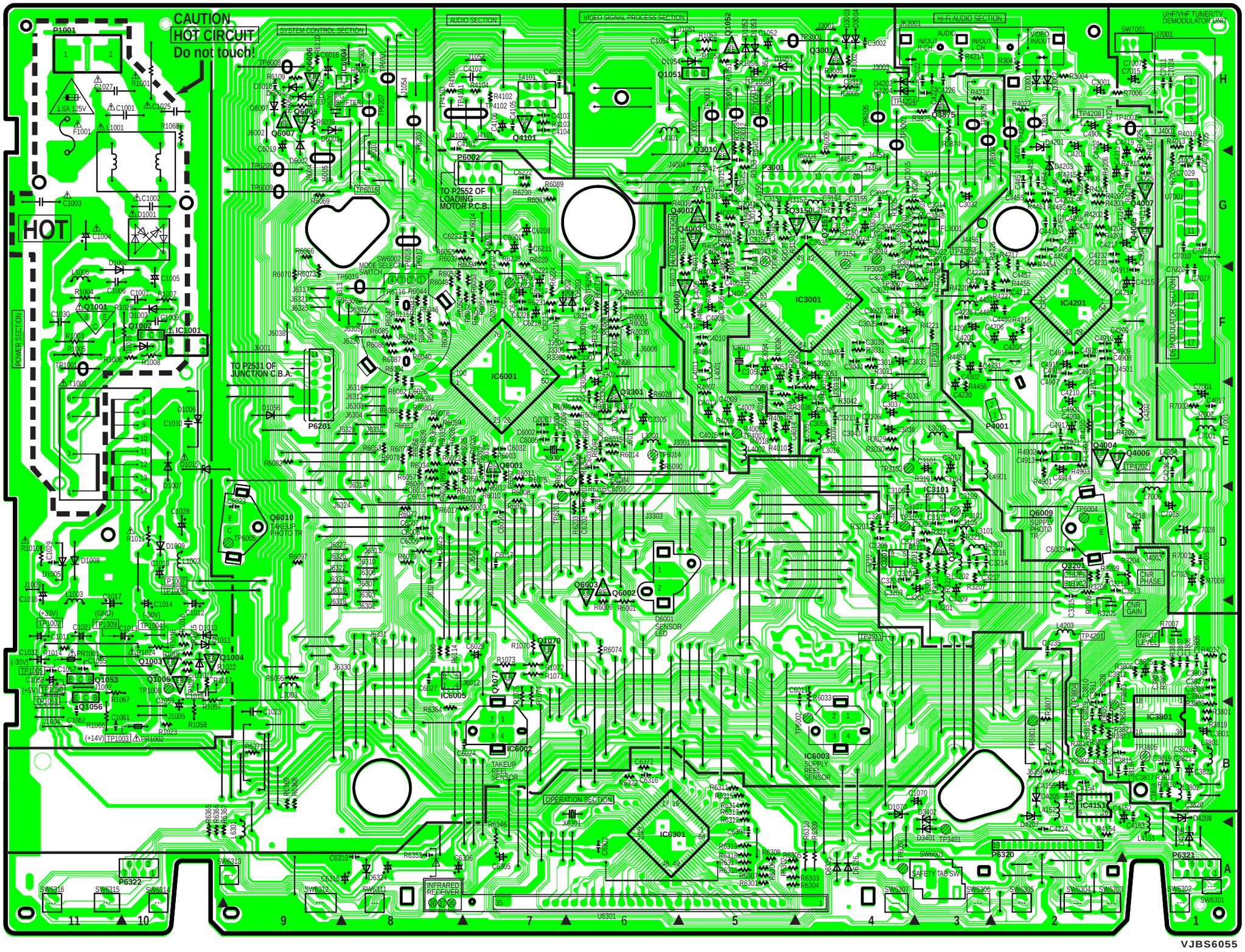
CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.6A 125V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D'T INCENDIE N'I UTILISERQUE DES FUSIBLE DE MÉME
TYPE 1.6A 125V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.



COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPONENT PARTS LOCATION GUIDE
MAIN C.B.A.

MAIN

TRANSISTOR	
Q1001	F-11
Q1002	F-10
Q1003	C-10
Q1004	C-9
Q1005	C-10
Q1051	H-6
Q1052	H-5
Q1053	C-11
Q1056	B-11
Q1070	C-7
Q1071	C-7
Q3001	H-4
Q3010	H-5
Q3150	G-5
Q3151	G-4
Q3201	D-2
Q3202	D-3
Q3301	E-6
Q3875	H-3
Q4001	F-6
Q4002	G-6
Q4003	G-5
Q4004	E-2
Q4005	G-1
Q4006	E-1
Q4007	G-1
Q4101	H-7
Q6001	E-7
Q6002	D-6
Q6003	D-6
Q6005	H-9
Q6006	H-9
Q6007	H-9
Q6009	D-2
Q6010	D-9

MAIN

IC	
IC1001	F-10
IC3001	F-4
IC3101	D-3
IC3201	D-4
IC3801	B-1
IC4151	B-2
IC4201	F-2
IC6001	F-7
IC6002	B-7
IC6003	B-4
IC6004	H-8
IC6005	C-8
IC6301	A-6

MAIN

CONNECTOR	
P1001	H-11
P3001	G-5
P4001	E-3
P6002	G-8
P6201	E-9
P6320	A-2
P6321	A-1
P6322	A-10

MAIN

ADJUSTMENT	
R3204	D-1
R3205	C-2
R6201	H-9
R7007	C-1

MAIN

TEST POINT	
TP1001	F-11
TP1002	C-11
TP1003	B-11
TP1004	C-10
TP1005	C-11
TP1006	D-10
TP1007	D-10
TP1008	C-10
TP1009	C-11
TP1050	C-11
TP1051	C-11
TP1058	H-5
TP3001	H-4
TP3002	H-4
TP3003	F-4
TP3004	G-2
TP3005	H-5
TP3006	F-5
TP3007	F-4
TP3008	H-5
TP3009	H-3
TP3010	F-3
TP3101	D-3
TP3102	D-4
TP3103	E-4
TP3150	G-5
TP3151	G-4
TP3401	A-3
TP3801	B-2
TP3802	B-2
TP3803	C-1
TP3804	B-2
TP3805	B-1
TP4002	H-2
TP4003	E-5

MAIN

TEST POINT	
TP4011	C-4
TP4101	H-8
TP4102	H-7
TP4103	H-8
TP4201	C-2
TP4202	E-1
TP4203	H-2
TP4204	H-4
TP4205	G-3
TP4207	H-2
TP4208	H-2
TP6001	H-8
TP6002	B-4
TP6003	H-5
TP6004	D-2
TP6005	D-9
TP6007	A-4
TP6008	H-9
TP6009	G-9
TP6014	E-6
TP6016	G-8
TP6017	F-8
TP6018	F-8
TP6019	F-9
TP6201	D-7
TP6202	E-6
TP6203	G-8
TP6204	F-6
TP6205	H-4
TP6206	F-7
TP6207	H-8
TP6208	H-5
TP6209	G-9
TP6210	F-7

LEADLESS COMPONENT PARTS LOCATION GUIDE
MAIN C.B.A.

Q1003	C-10	R3029	E-4	R4003	F-5	R6002	D-8	R6065	F-6	R6311	B-5	C3055	E-5	C3829	B-2	C4920	F-2
Q1004	C-9	R3030	E-4	R4004	F-5	R6004	G-4	R6066	G-9	R6312	B-5	C3057	E-4	C4001	F-5	C4921	E-2
Q1005	C-10	R3031	F-4	R4005	E-5	R6005	H-4	R6067	H-8	R6313	B-5	C3059	F-5	C4003	F-5	C6002	E-7
Q1052	H-5	R3032	H-5	R4006	F-5	R6006	C-6	R6068	F-6	R6314	B-5	C3062	E-4	C4004	G-5	C6003	E-7
Q1070	C-7	R3033	G-4	R4007	E-5	R6007	E-7	R6069	G-9	R6315	B-5	C3102	D-3	C4005	F-5	C6004	E-7
Q1071	C-7	R3034	G-3	R4008	G-6	R6008	D-7	R6070	F-9	R6316	A-5	C3104	E-3	C4006	F-5	C6005	E-7
Q3001	H-4	R3035	F-5	R4009	E-5	R6010	D-7	R6071	F-6	R6317	A-5	C3105	D-3	C4010	F-5	C6006	E-7
Q3010	H-5	R3036	E-5	R4010	E-5	R6011	E-7	R6072	D-8	R6318	A-5	C3106	E-4	C4011	F-5	C6007	D-8
Q3150	G-5	R3037	E-4	R4011	E-5	R6012	E-7	R6073	F-9	R6319	A-5	C3107	D-4	C4015	E-5	C6008	D-8
Q3151	G-4	R3038	F-5	R4012	F-6	R6013	E-6	R6075	E-7	R6322	B-6	C3108	D-4	C4017	E-1	C6009	D-8
Q3201	D-2	R3039	E-4	R4013	H-1	R6014	E-6	R6076	E-8	R6353	A-8	C3150	G-5	C4020	H-7	C6010	D-7
Q3202	D-3	R3040	E-5	R4014	G-5	R6015	E-6	R6077	E-8	R6364	B-8	C3151	G-5	C4022	H-3	C6011	C-5
Q3301	E-6	R3041	H-2	R4015	F-5	R6016	E-7	R6078	E-8	R6365	B-10	C3152	G-5	C4101	H-8	C6012	E-7
Q3875	H-3	R3043	G-5	R4016	H-1	R6017	D-8	R6079	D-8	R6366	B-10	C3153	G-4	C4103	H-7	C6013	D-8
Q4001	F-6	R3044	F-5	R4017	C-1	R6018	D-7	R6080	E-8	R6367	B-9	C3154	G-4	C4104	H-7	C6014	G-7
Q4002	G-6	R3101	E-3	R4018	E-5	R6019	E-7	R6081	G-7	R6368	B-9	C3155	G-4	C4105	H-7	C6015	D-8
Q4003	G-5	R3150	G-4	R4027	H-2	R6020	E-7	R6082	E-9	R6369	B-9	C3156	G-5	C4153	A-1	C6017	D-7
Q4004	E-2	R3151	G-5	R4028	F-5	R6021	E-6	R6083	E-8	R6371	B-9	C3201	D-4	C4154	B-2	C6018	H-9
Q4005	G-1	R3152	G-5	R4101	H-8	R6022	E-8	R6084	E-8	R6372	B-6	C3203	D-4	C4156	B-2	C6021	H-8
Q4006	E-1	R3153	G-5	R4102	H-7	R6023	E-8	R6085	F-8	R7001	D-1	C3204	D-4	C4211	G-2	C6022	D-2
Q4007	G-1	R3154	G-4	R4103	H-7	R6024	D-8	R6086	F-8	R7002	E-1	C3205	D-4	C4212	F-2	C6023	D-9
Q4101	H-7	R3201	D-3	R4104	H-7	R6025	E-7	R6087	F-8	R7004	G-1	C3206	D-3	C4215	F-1	C6024	B-8
Q6001	E-7	R3202	D-4	R4153	B-2	R6026	E-8	R6088	E-8	R7006	H-1	C3207	D-4	C4219	H-2	C6025	D-8
Q6002	D-6	R3203	D-3	R4154	A-2	R6027	D-8	R6089	G-7	R7008	D-1	C3208	D-4	C4220	F-3	C6026	E-8
Q6003	D-6	R3206	C-2	R4201	G-2	R6028	E-6	R6090	E-6	C1010	E-10	C3210	D-4	C4221	G-2	C6027	C-8
Q6005	H-9	R3207	D-3	R4202	G-2	R6029	F-6	R6091	F-6	C1029	D-11	C3211	E-4	C4222	H-3	C6028	E-6
Q6006	H-9	R3208	D-2	R4203	G-2	R6030	F-6	R6092	E-7	C1055	C-11	C3212	D-2	C4223	B-2	C6031	E-6
Q6007	H-9	R3209	D-2	R4204	G-2	R6031	E-8	R6093	E-6	C1057	C-11	C3213	D-1	C4224	A-2	C6032	E-7
R1006	F-11	R3210	D-3	R4205	G-2	R6032	G-8	R6094	G-8	C1061	B-11	C3214	D-2	C4225	G-1	C6201	D-6
R1014	C-11	R3211	D-3	R4206	G-2	R6034	E-8	R6095	C-9	C1062	B-11	C3215	C-2	C4226	H-3	C6202	D-6
R1015	C-10	R3212	D-3	R4207	G-2	R6035	E-8	R6096	E-8	C3002	H-4	C3216	D-3	C4227	F-3	C6203	E-6
R1016	C-10	R3213	D-4	R4208	G-2	R6036	E-8	R6097	D-9	C3011	E-4	C3217	D-3	C4228	F-3	C6204	E-6
R1017	C-10	R3214	D-3	R4209	E-2	R6039	E-8	R6098	E-6	C3014	G-3	C3218	D-4	C4231	F-3	C6207	F-7
R1018	C-10	R3301	E-6	R4210	E-2	R6040	F-8	R6099	E-7	C3015	G-4	C3303	E-6	C4232	G-2	C6210	F-7
R1019	C-10	R3302	F-7	R4211	G-1	R6041	F-8	R6100	C-8	C3016	F-4	C3306	F-6	C4233	G-2	C6211	G-7
R1020	C-10	R3303	E-6	R4212	H-3	R6042	F-8	R6103	G-5	C3018	F-3	C3307	F-6	C4235	C-2	C6213	F-7
R1022	C-10	R3304	E-6	R4213	G-1	R6043	F-8	R6109	H-9	C3019	G-3	C3308	E-6	C4236	E-1	C6214	F-6
R1023	B-10	R3305	F-6	R4214	H-3	R6044	F-8	R6110	H-9	C3020	G-4	C3312	H-4	C4451	G-2	C6216	F-7
R1051	H-5	R3801	B-1	R4215	G-2	R6045	F-8	R6114	C-8	C3021	G-4	C3802	C-1	C4452	G-2	C6217	F-7
R1056	H-5	R3802	B-1	R4216	F-2	R6046	F-8	R6115	F-8	C3022	F-4	C3803	C-1	C4453	G-2	C6222	G-7
R3002	H-4	R3803	C-1	R4217	G-2	R6047	F-8	R6116	F-8	C3025	F-4	C3804	C-1	C4454	G-2	C6223	G-8
R3003	H-4	R3804	C-1	R4218	G-1	R6048	F-8	R6202	D-6	C3026	F-4	C3805	C-1	C4455	G-2	C6228	F-7
R3004	H-2	R3805	B-2	R4219	G-1	R6049	F-8	R6203	D-6	C3027	F-4	C3806	C-1	C4456	G-2	C6230	F-7
R3011	G-4	R3806	C-2	R4220	F-3	R6050	F-8	R6204	E-6	C3029	F-4	C3807	C-1	C4457	F-2	C6302	A-6
R3013	G-5	R3807	B-2	R4221	F-3	R6051	F-8	R6205	D-6	C3035	G-5	C3808	C-1	C4458	G-2	C6304	A-5
R3014	G-5	R3810	B-1	R4222	F-3	R6052	F-7	R6224	F-7	C3036	G-4	C3810	C-2	C4459	G-2	C6310	A-9
R3015	G-5	R3811	B-1	R4224	H-2	R6053	F-7	R6228	G-7	C3039	F-4	C3811	C-2	C4460	F-2	C6316	B-6
R3016	G-5	R3812	B-2	R4225	H-1	R6054	F-7	R6229	G-7	C3041	G-5	C3812	C-2	C4907	E-2	C7005	D-1
R3019	G-4	R3813	B-2	R4227	F-2	R6055	G-8	R6230	G-7	C3042	G-5	C3815	B-2	C4908	F-2	C7007	H-1
R3020	G-4	R3814	B-2	R4451	G-2	R6056	F-7	R6231	F-7	C3043	E-4	C3816	B-1	C4909	F-2	C7010	G-1
R3021	F-4	R3815	B-2	R4452	G-2	R6057	E-8	R6301	A-5	C3044	F-4	C3817	B-1	C4910	F-2	C7011	H-1
R3022	G-3	R3819	B-1	R4453	F-3	R6058	E-8	R6302	A-5	C3045	F-4	C3818	B-1	C4911	F-2	C7018	G-1
R3023	F-3	R3820	B-1	R4454	G-2	R6059	E-8	R6303	A-4	C3046	G-4	C3819	B-1	C4912	G-2	C7020	F-1
R3024	G-4	R3821	B-2	R4455	F-2	R6060	H-9	R6304	A-4	C3047	G-4	C3820	B-1	C4913	E-2	C7023	G-1
R3025	G-4	R3822	B-2	R4456	E-3	R6061	F-6	R6305	A-5	C3048	G-3	C3821	B-1	C4916	F-2	C7024	H-1
R3026	G-4	R3875	H-3	R4901	E-2	R6062	E-8	R6306	A-5	C3049	E-4	C3826	B-1	C4917	E-2	C7027	F-1
R3027	G-5	R4001	F-5	R4902	E-2	R6063	E-8	R6307	A-5	C3050	F-4	C3827	C-1	C4918	F-2	C7029	G-1
R3028	H-5	R4002	G-5	R4903	E-2	R6064	F-8	R6308	A-5	C3052	F-4	C3828	C-2	C4919	F-2	L7005	H-1

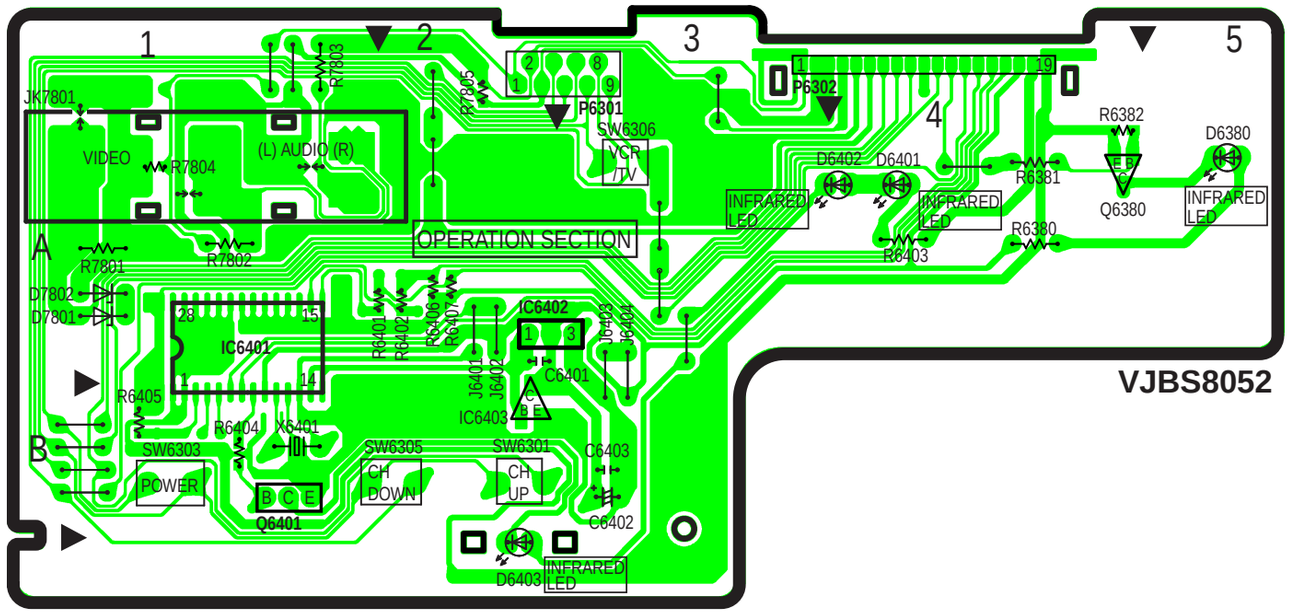
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B

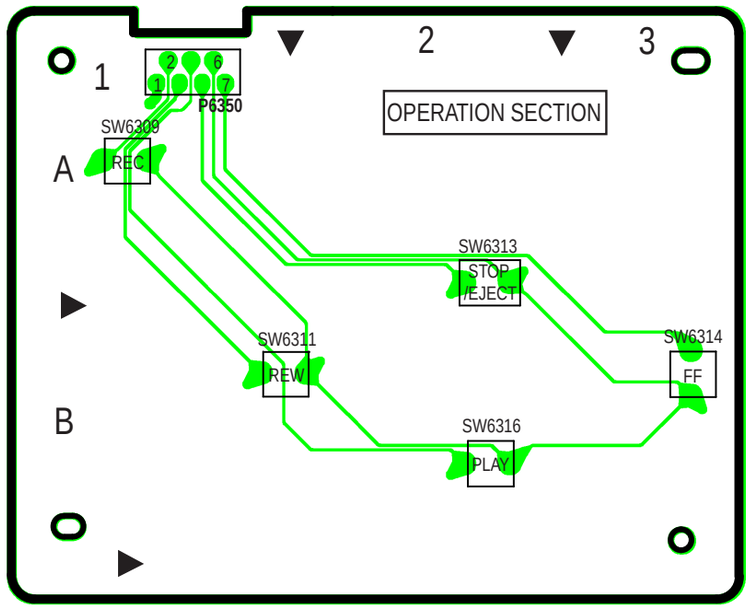


OPERATION	
IC	
IC6401	A-1
IC6402	A-2
IC6403	B-2
TRANSISTOR	
Q6380	A-4
Q6401	B-1
CONNECTOR	
P6301	A-3
P6302	A-3

LEADLESS COMPONENT
PARTS LOCATION GUIDE
OPERATION C.B.A.

R6380	A-4	R6407	A-2
R6381	A-4	R7801	A-1
R6382	A-4	R7802	A-1
R6401	A-2	R7803	A-1
R6402	A-2	R7804	A-1
R6403	A-4	R7805	A-2
R6404	B-1	C6401	A-2
R6405	B-1	C6402	B-2
R6406	A-2	C6403	B-3

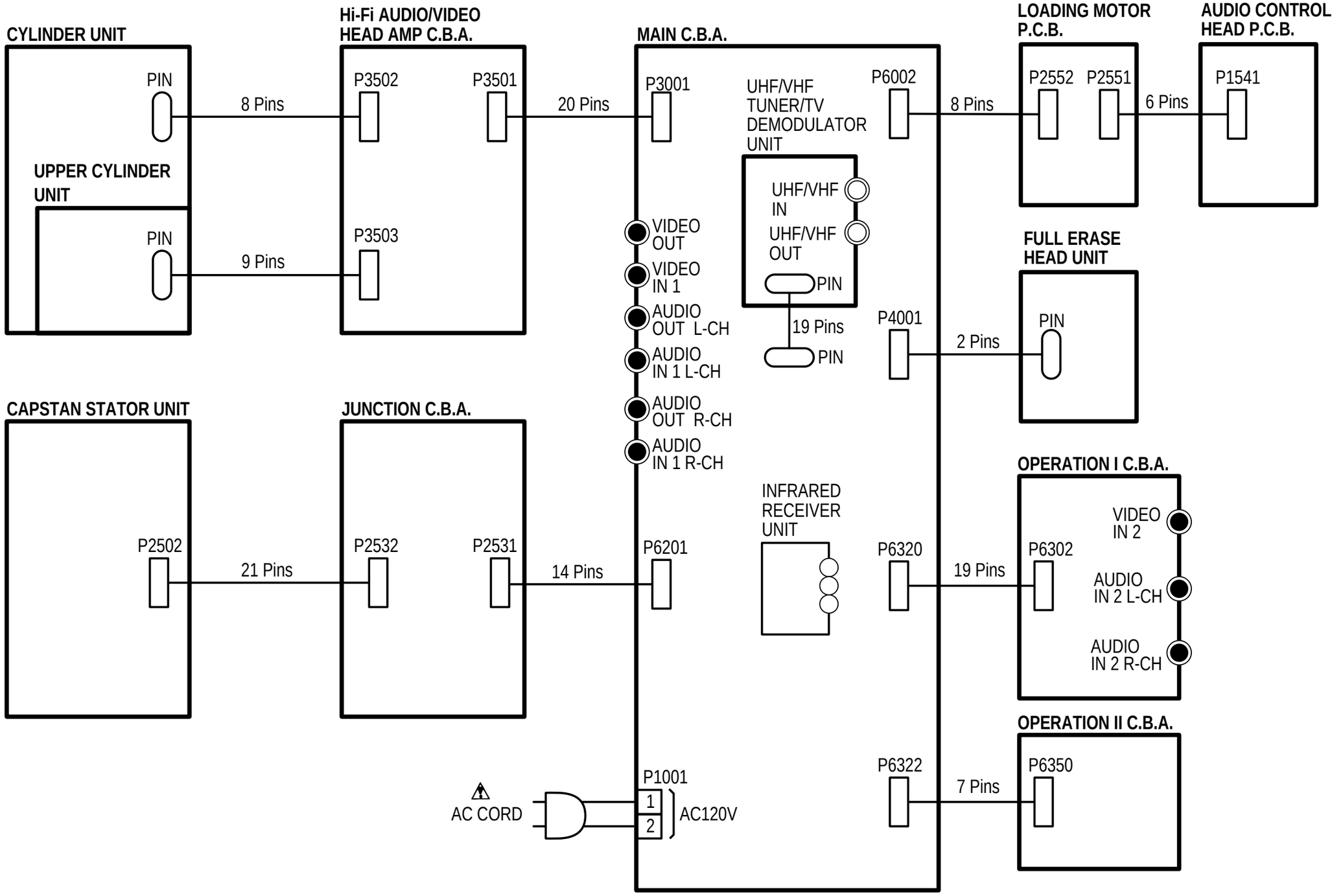
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.



VJBS8053

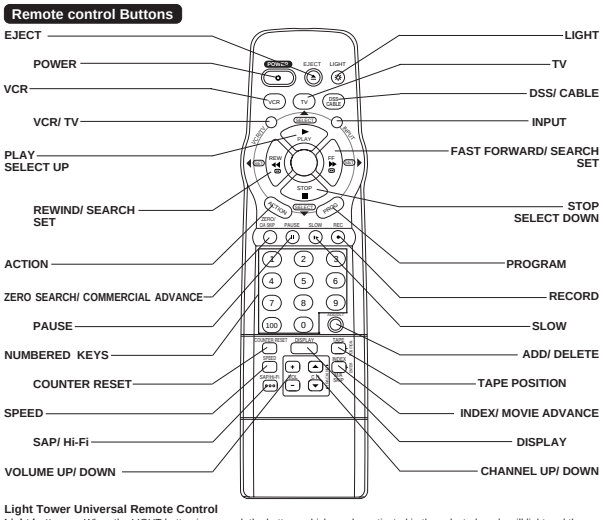
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.



Location of Controls

Remote control Buttons

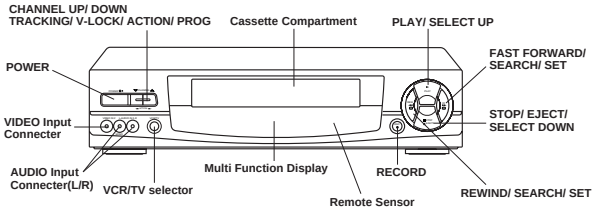


Light Tower Universal Remote Control

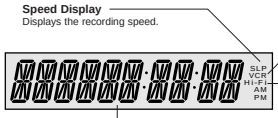
Light button: When the LIGHT button is pressed, the buttons which can be activated in the selected mode will light and the selected mode button (TV/VCR or CABLE/DSS) will flash for 5 seconds. If no buttons are pressed within 5 seconds, the light will turn off in order to conserve battery power. Also while holding down the buttons, the selected mode button will flash so you will be able to see, in the dark, which mode has been selected.

EJECT button: When EJECT is pressed, the tape is ejected from Cassette Compartment. If EJECT is pressed during recording, the VCR will not respond to the command.

Front View of the VCR



Multi Function Display



Speed Display
Displays the recording speed.

VCR Indicator
Lights when the VCR/TV selector is set to VCR.

Hi-Fi Indicator
Lights when Hi-Fi audio is monitored or playback.

Clock/ Status/ Channel Display
Displays the current time. Briefly displays VCR status when a function button is pressed.
Briefly displays the channel number, or "LINE1" or "LINE2" when a channel or line input is selected.
In demonstration mode, featured items are displayed. (See below.)

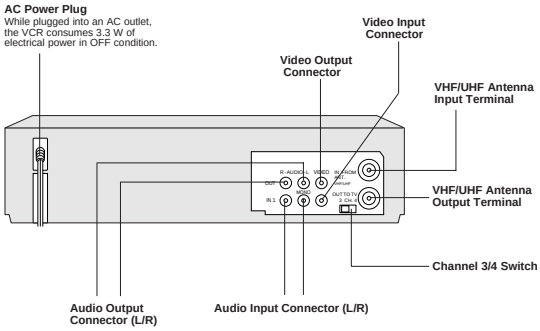
Self Demo Mode

After first power on or VCR memory reset (page40), Self Demo mode is started after 5 seconds.
This mode is cancelled when clock is set.
To restart, hold down PLAY on VCR for 5 seconds.
To cancel, hold down PLAY again for 5 seconds.

- This mode is only possible when cassette is not inserted and clock is not set.

Rear View of the VCR

AC Power Plug
While plugged into an AC outlet, the VCR consumes 3.3 W of electrical power in OFF condition.

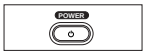


One Time VCR Setup

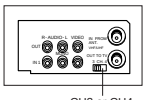
When VCR is turned on the first time,
- Setup mode is entered automatically on the TV screen.
- Self Demo Mode is started automatically on Multi-Function Display. When you set the clock, it is canceled.

Process of Setup
Language ⇨ Channel ⇨ Clock

1 **Turn the TV and VCR on.**
Press POWER.

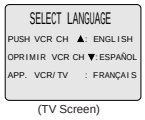


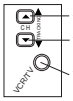
2 **Tune to VCR output channel.**
Tune TV to CH3 or CH4.
(Same as back of VCR)



- Always tune TV to this channel to monitor the VCR.
- If you used audio/video jack connection, tune the TV to its video input.

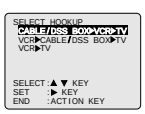
3 **Select the language.**





- Use remote or VCR buttons.
- If wrong language is set, do "Reset All VCR Memory Functions"

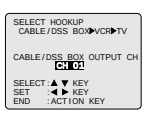
4 **Select hookup.**



1) Press ▲▼ to select.
2) Press ▶ to set.

- If you selected "CABLE/ DSS BOX ▶ VCR ▶ TV," continue with step 5. (Only the cable box output channel will be placed in memory.) If not, go to step 7.

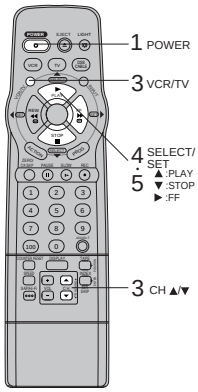
5 **Select cable box or DSS receiver output channel.**



1) Press ▲▼ to select.
2) Press ▶ to enter.

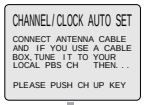
- If necessary, refer to cable box manual.
- If you used Audio/ Video jack connection to cable box, set "VIDEO OUT".

6 **Turn on cable box and set it to PBS channel in your time zone.**
- If you use a DSS receiver, it must be turned off.

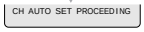


IMPORTANT NOTE FOR AUTO CLOCK SET
- Auto clock set is performed the first time the VCR is turned off each day. If used, a cable box must be left on and tuned to the PBS channel at the time VCR power is turned off if you want auto clock set to be done.
- If using, a DSS receiver must be turned off for auto clock set.
- If Cable Box or DSS receiver is connected to VCR via Audio/Video jacks, an RF coaxial cable must also be connected for auto clock set and channel auto set features.

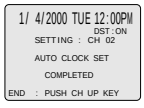
7


CHANNEL/ CLOCK AUTO SET
CONNECT ANTENNA CABLE AND IF YOU USE A CABLE BOX, TUNE IT TO YOUR LOCAL PBS CH THEN. . .
PLEASE PUSH CH UP KEY

Start Channel Auto Set and Clock Auto Set.

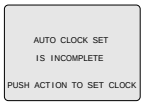


Case 1 (Setup completed)

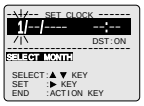


- If your area observes DST (daylight saving time), but the time is incorrect, do the "Time Zone Adjust" steps.

Case 2 (Setup incomplete)



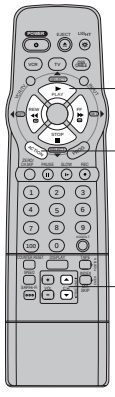
Clock Setup incomplete.
Set the clock manually.



- Likewise, set date, year, time, DST (Daylight Saving Time).

To Make Corrections, repeatedly press ◀ ▶ to move to error, then correct.

- To exit this mode, press ACTION again.



Notes
- VCR calendar is accurately maintained to Dec. 31, 2096 11:59PM.
- Channel auto set selects normal TV or Cable channels depending on your VCR hookup.

Using ▲▼◀▶ keys

You can also operate the menu screen using VCR buttons.
If you use VCR buttons, press CH ▲ and CH ▼ together to display the menu screen.

▲: PLAY ◀: REW
▼: STOP ▶: FF

When menu screens are displayed, PLAY, STOP, REWIND, and FF buttons function as ▲▼◀▶ only.

Timer Recording Using VCR Plus+ System

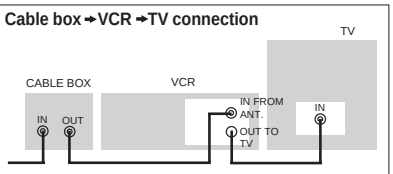
VCR Plus+ System is ...
a feature that allows you to set **most items** of a timer recording by simply entering a special code number (PlusCode programming number) found in TV GUIDE and selected newspaper TV listings.

Process of Recording
Connection ⇨ Setup ⇨ Programming

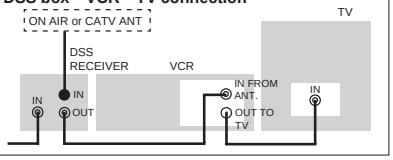
Choose your connection type from the following diagrams

A

Cable box ➡VCR ➡TV connection



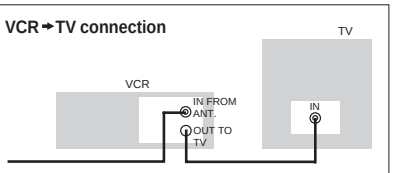
DSS box ➡VCR ➡TV connection



Set up

B

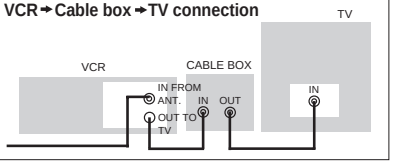
VCR ➡TV connection



Programming

Set up

VCR ➡Cable box ➡TV connection

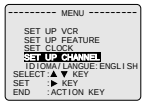


Cable Box Setup

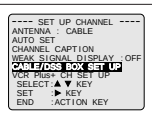
Process of Recording
Connection ⇨ Setup ⇨ Programming

1 **Display menu.**
Press ACTION.*

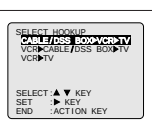
2 **Select SET UP CHANNEL.**
1) Press ▲▼ to select.
2) Press ▶ to display.



3 **Select CABLE/DSS BOX SET UP.**
1) Press ▲▼ to select.
2) Press ▶ to display.

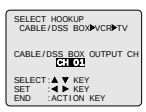


4 **Select your hookup method.**
1) Press ▲▼ to select.
2) Press ▶ to set.



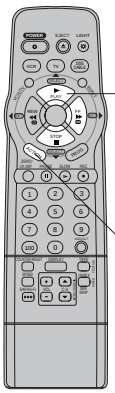
- If CABLE/DSSBOX ➡VCR ➡TV, go to step 5.
  If other, press ACTION three times.

5 **Select cable box or DSS receiver output channel.**
1) Press ▲▼ to select.
2) Press ▶ to enter.



- If necessary, refer to your Cable Box/DSS manual.
- If you are using Audio/Video jack connections, select and set "VIDEO OUT" as output channel.

6 **End setup.**
Press ACTION twice.



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Timer Recording Using VCR Plus+ System (continued)

Auto VCR Plus+ System Channel Setup (Part 1)

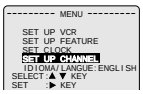
In order for VCR to read VCR Plus+ code, some set up is required. Guide (VCR Plus+) channel number is assigned to each local broadcast and cable station. Because this number sometimes differs from channel TV receives station on, it is necessary to problem VCR with local channel information. To receive VCR Plus+ channels automatically, perform the steps below. Or, see "Manual VCR Plus+ System Channel Setup" section.

Process of Recording
Connection ⇨ Setup ⇨ Programming

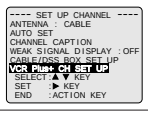
Important Note
- **"One Time VCR Setup" must be completed before "Auto VCR Plus+ System Channel Setup" can be done. If any parts of setup is incomplete, a warning screen appears.**
- **If your VCR connection type changes from type A to B, repeat steps 1~4 and select VCR ►CABLE/DSS► TV before proceeding with these steps.**

1 **Display menu.**
Press ACTION.*

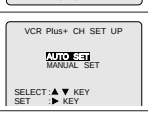
2 **Display SET UP CHANNEL.**
1) Press ▲▼ to select.
2) Press ▶ to display.



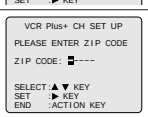
3 **Display VCR Plus+ CH SET UP.**
1) Press ▲▼ to select.
2) Press ▶ to display.



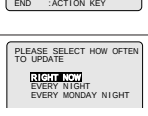
4 **Select AUTO SET.**
1) Press ▲▼ to select.
2) Press ▶ to set.



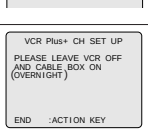
5 **Enter Zip Code.**
1) Press ▲▼◀▶ to select and enter each number.
2) Press ▶ or ACTION to set.



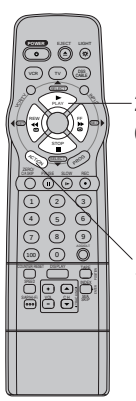
6 **Select When to Update.**
1) Press ▲▼ to select.
2) Press ▶ to set.



7 **End setup.**
Press ACTION twice.



- Make sure to leave VCR off overnight. If controllable, leave your cable box on.



Notes
- Make each entry within 5 minutes or VCR will leave this mode.
- Once local channels have been programmed, they will stay in memory, even in the case of a power failure.
- "SET" indicator will flash during Auto VCR Plus+ System Setup.
- If the start time for a timer recording comes up during Auto VCR Plus+ System Setup, the timer recording will have priority.

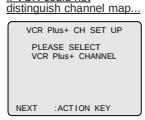
Auto VCR Plus+ System Channel Setup (Part 2)

Before you perform the following steps, you should have:
- **completed "Auto VCR Plus+ System Channel Setup (Part 1)".**
- **left VCR on overnight, and turned it back on after 7:00 AM the next day.**

1 If channel updating was successful...

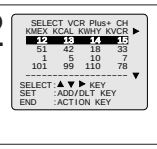
Exit this mode.
Press ACTION.

If VCR could not distinguish channel map...

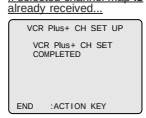


Display SELECT VCR Plus+ CH.
1) Press ACTION to display.
2) Continue with step 2.

2 **Select channel map for your area.**
1) Press ▲▼ ◀▶ to select.
2) Press ADD/ DLT to set.

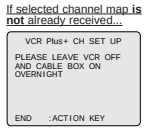


3 If selected channel map **is** already received...



Exit this mode.
Press ACTION.

If selected channel map **is not** already received...



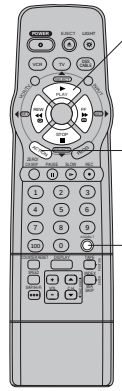
End Setup.
Press ACTION. (Channel map will be updated overnight)

- Make sure to leave VCR off overnight. If controllable, leave your cable box on.

Repeat these steps as necessary.

If Auto Setup fails, do "Manual VCR Plus+ System Channel Setup".

Process of Recording
Connection ⇨ Setup ⇨ Programming



To Change or Update Auto VCR Plus+ System Channel Setup

(E.g. you selected wrong channel map or zip code.)

a Do "Auto VCR Plus+ System Channel Setup (Part 1)" steps 1~4.

b Press ▲▼ to select UPDATE VCR Plus+ or SELECT VCR Plus+ CH, then press ▶.

c If you selected UPDATE VCR Plus+ CH, perform steps 5~7 in the "Auto VCR Plus+ System Channel Setup (Part 1)" section.

If you selected SELECT VCR Plus+ CH, perform steps 2~3 in the "Auto VCR Plus+ System Channel Setup (Part 2)" section on this page.

Timer Recording Using VCR Plus+ System (continued)

Manual VCR Plus+ System Channel Setup

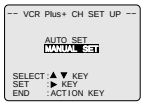
- **Before you begin, complete "Channel Setup Preparations" below right.**

Important Note

- **If your VCR connection type changes from type A to B on page 14, repeat steps 1~4 of page 15 and select VCR► CABLE/DSS► TV before proceeding with these steps.**

1 Do "Auto VCR Plus+ System Channel Setup (Part 1)," steps 1~3 on page 16.

2

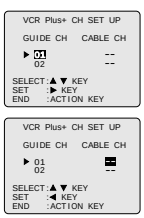


Select MANUAL SET.

1) Press ▲▼ to select.
2) Press ▶ to set.

IMPORTANT NOTE:
For step 3, use the list you prepared. You may leave lines blank if you do not receive that station, or if the GUIDE CH number and the CABLE (or TV) CH numbers are the same.

3



Select VCR Plus+ channels.

1) Press ▶ to move cursor to right column.
2) Press ▲▼ to change CABLE CH number.
3) Press ◀ to set.
4) Press ▲▼ to scroll up/down GUIDE CH column.

- Repeat step 3 until list is complete.

To make corrections,
Press ▲▼ and ▶ to move to error, then ▲▼ to change, or ADD/DLT* to erase number.

4

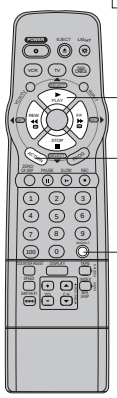
End setup.
Press ACTION three times.

Notes

- Make each entry within 5 minutes or the VCR will leave this mode.
- Once local channels have been programmed, they will stay in memory, even in the case of a power failure.

Process of Recording

Connection ⇨ Setup ⇨ Programming



Channel Setup Preparations

In order to complete step 3 left, make a local channel list (see example below).

You will need the following:
- A line up of normal TV and/ or Cable stations and the channel number you receive them on.
- A list of Guide (VCR Plus+) channel numbers for the stations you receive found in TV Guide and selected newspapers.

1 Make a 3-column chart. In the left column, write the name of all the stations you receive.
2 In the middle column, write each station's Guide (VCR Plus+) number from TV Guide.
3 In the right column, write the channel number your TV receives the station on.

EXAMPLE ONLY

Broadcast or Cable Station Name	Assigned Guide (VCR Plus+) channel no.	Channel no. your TV receives the station on
HBO	33	15
Nickelodeon	38	20
CBS	04	04
FOX	11	

Check list before you begin.
- ☐ The clock is set.
- ☐ VCR Plus+ System Setup is complete.

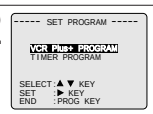
Process of Recording

Connection ⇨ Setup ⇨ Programming

1

Display SET PROGRAM.
Press PROG.

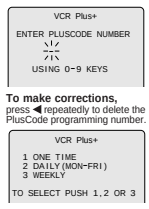
2



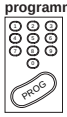
Display VCR Plus+ screen.

1) Press ▲▼ to select.
2) Press ▶ to display.

3



Enter PlusCode programming number.



1) Press Numbered keys.
2) Press PROG to lock in the program.

To make corrections,
press ◀ repeatedly to delete the PlusCode programming number.

Enter record frequency.

3) Press 1, 2, or 3 key to select program type.

4

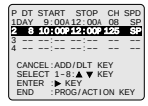
Select Category.**

1) Press ▲▼ to change.
2) Press ▶ set.

Change record speed.
Repeat 1) and 2).

5 Make notes. -----> Do step 4.
- If not wanted, go to step 6.

6


P DT START STOP CH SPD
1DAY 9:00A 12:00A 08 SP
2 8 10:00P 12:00P 125 SP
3 -- --:-- --:-- -- --
4 -- --:-- --:-- -- --
CANCEL:ADD/DLT KEY
SELECT 1-8:▲▼ KEY
ENTER :▶ KEY
END :PROG/ACTION KEY

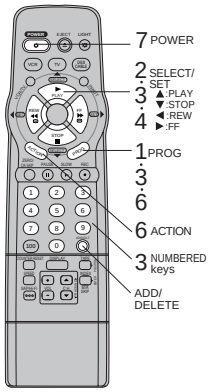
End programming.

1) Press PROG (or ACTION).
To cancel, press ADD/DLT.
2) Press PROG (or ACTION) again to exit.

7 Set timer.

Press POWER OFF.

Multi Function Display



** Category Items
N/A(not applicable), SPORTS, MOVIE, COMEDY, MUSIC, DRAMA

Use normal Timer Recording steps if:
- the PlusCode programming number for a program is not listed.
- you anticipate the program, such as a sporting event, to run over the scheduled stop time.

See page to:
- cancel a timer recording in progress.
- replace program contents.
- review or clear program contents once set.

Important notes for DSS/Cable Box users
- When recording via DSS, the receiver, must be left on.
- When recording via cable or antenna, DSS receiver must be off.

Notes
- Avoid overlapping program times.
- VCR PlusCode programming numbers can not be used to program the VCR to record DSS channels.
- You can obtain unlisted PlusCode numbers by calling 1 - 900 - 454 - 7587. Call costs approximately $.95 per minute.

Tape Operation

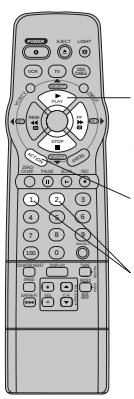
COMMERCIAL▸▸ADVANCE®

COMMERCIAL▸▸ADVANCE® detects and marks the beginning and end points of commercials on your tape for recordings over 15 minutes in length. When COMMERCIAL▸▸ADVANCE® marked tape is played back, the VCR automatically advances through the commercial segments at high speed. You can also set this feature to Manual so as to have more control over the advance process. The effectiveness of this system can vary due to differences in the way television stations broadcast. See page for answers to the most commonly asked questions about this feature.

COMMERCIAL▸▸ADVANCE® Marking

When C/A RECORD: ON, VCR automatically rewinds the tape after a recording has been made and marks the beginning and end of any detected commercial blocks. After marking is done, the tape is returned to the end of recording. Commercials are not erased from the tape.

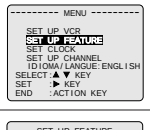
Check list before you begin.
- ☐ All connections are made.
- ☐ One time Setup completed.
- ☐ VCR is plugged in.
- ☐ TV is turned on and set to the VCR channel (CH 3 or 4).



1

Display menu.
Press ACTION.*

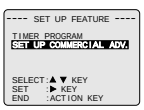
2



Display SET UP FEATURE.

1) Press ▲▼ to select.
2) Press ▶ to display.

3



Display SET UP COMMERCIAL ADV.

1) Press ▲▼ to select.
2) Press ▶ to display.

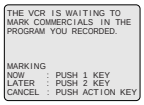
4

Set ON or OFF.

1) Press ▲▼ to select.
2) Press ▶ to set.

Note
- When using the timer to record two adjacent shows on the same channel, better accuracy can be obtained by programming each shows separately.

ON Timer, VCR Plus+ System, and One Touch recordings are marked automatically.

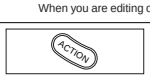

THE VCR IS WAITING TO MARK COMMERCIALS IN THE PROGRAM YOU RECORDED.
MARKING
NOW : PUSH 1 KEY
LATER : PUSH 2 KEY
CANCEL : PUSH ACTION KEY

When STOP is pressed during normal recording, Select One of a) or b) or c).
a) Press 1 key to mark the recording now.
"NOW MARKING COMMERCIALS" appears.
b) Press 2 key to mark the recording later (after the power has been turned off).
- If the tape is rewound and another recording started before the power is turned off, commercials may not be marked correctly.

c) Press ACTION to cancel the marking of this recording.

OFF The VCR will not mark commercials.
When you are editing or dubbing a tape, or when you do not wish to use this feature, off should be selected.

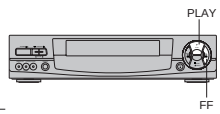
5



Return to normal screen.
Press ACTION three times.

COMMERCIAL▸▸ADVANCE® Playback

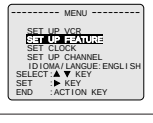
When playing back recording which have been marked using COMMERCIAL▸▸ADVANCE® feature, you can either set VCR to automatically advance through marked commercial blocks, or set it so that commercials are only skipped on your command.



1

Display menu.
Press ACTION.*

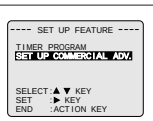
2



Display SET UP FEATURE.

1) Press ▲▼ to select.
2) Press ▶ to set.

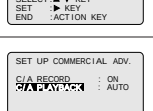
3



Display SET UP COMMERCIAL ADV.

1) Press ▲▼ to select.
2) Press ▶ to set.

4

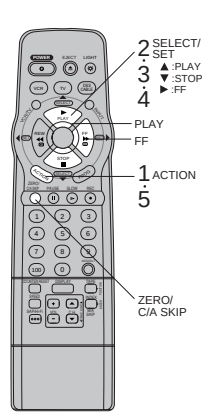


Set AUTO or MANUAL.

1) Press ▲▼ to select.
2) Press ▶ to set.

AUTO VCR will automatically advance through marked commercial blocks recorded on the tape and then resume playback.

MANUAL VCR will advance through commercials only when ZERO/ C/A SKIP is pressed. Playback will resume when the end mark of a commercial block is found, or a new recording or blank portion is detected, or after 8 minutes.



5

Return to normal screen.
Press ACTION three times.

Notes
- The selection mode in step 4 remains set unless there is a power outage in which case the original factory setting will be restored.
- If playback is started in the middle of a commercial, only a single commercial is shown, or an individual commercial is longer than 1 minute, a commercial may not be skipped. Press FF to quickly advance through the commercial.
- Part of a recorded program may be skipped over if the program portion between commercials is less than one minute or there are frequent dark and quiet scenes during the program. To view the portion of tape being incorrectly skipped, press PLAY while the VCR is skipping, reverse the tape to a point just prior to where the skipping began and press PLAY again. This time the group will not be automatically skipped. Automatic skipping will be re-enabled when the end of the marked group is detected.

COMMERCIAL▸▸ADVANCE® is a trademark of SRT, Inc.
A Jerry Iggulden invention licensed in association with Arthur D. Little Enterprises, Inc.
U.S.Pat. No. 5,333,091
other patents pending

Tape Operation (continued)

The most commonly asked questions about COMMERCIAL ADVANCE® are answered below.

Question	Answer
How fast does the VCR advance through commercials?	The VCR advances through a 3-minute commercial block in about 8 to 12 seconds if the tape speed is SLP. In SP, it takes about 25 to 35 seconds.
Are commercials advanced through only when I playback a recording?	Yes. The commercials are not marked until after the recording is finished.
Are commercials still recorded on the tape in case I choose to view them sometime?	Yes. By setting the C/A PLAYBACK to MANUAL, see page 23, you can view or advance through commercials as desired.
Does COMMERCIAL ADVANCE® work in all recording speeds?	Yes. COMMERCIAL ADVANCE® works in SP, LP, and SLP.
Does the VCR advance through commercials each time I playback tapes which were recorded using COMMERCIAL ADVANCE®?	Yes. As long as C/A PLAYBACK is set to AUTO, the VCR should advance through commercials each time the tape is played back.
After marking commercials, does the VCR stop at the end of the tape, or rewind to the beginning?	The tape stops at the end of the recording so that any additional timer recordings can be performed.
Can I play my COMMERCIAL ADVANCE® recordings in non-COMMERCIAL ADVANCE® VCRs?	Yes. COMMERCIAL ADVANCE® marked recordings will play in non-COMMERCIAL ADVANCE® VCRs, but commercials will not be advanced through.
Does the marking process interfere with other programmed recordings?	No. If the interval between 2 or more timer programs is not sufficient to mark the recording, marking will be done after all recordings are complete and the power goes off.
What happens if I cancel the marking in progress so I can use the VCR?	Marking will be resumed when the VCR's power is turned off as long as the tape has not been ejected.
What if part of my program is advanced through along with the commercials?	Please see the 3rd note.

Additional Notes:

- Because of the various ways in which commercials are broadcast, the VCR may not be able to recognize all commercials.
- If a timer recording is scheduled for the middle of the night, please be aware that the VCR will make some noise as it rewinds and fast forwards the tape while marking commercials.

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A Jerry Iggulden invention licensed in association with Arthur D. Little Enterprises, Inc.

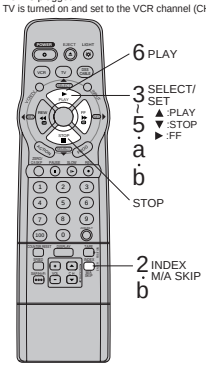
U.S.Pat. No. 5,333,091
other patents pending

MOVIE ADVANCE™

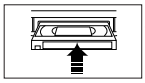
MOVIE ADVANCE™ helps you locate certain parts of prerecorded movies (rented or purchased).
The feature works in two ways.
- You can go to the beginning of the movie.
- You can skip from one preview to the next.

MOVIE ADVANCE™ works only on cassette recorded in SP speed with the record tab removed.

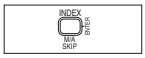
Check list before you begin.
- ☐ All connections are made.
- ☐ One time Setup completed.
- ☐ VCR is plugged in.
- ☐ TV is turned on and set to the VCR channel (CH 3 or 4).



1 **Insert a cassette without record tab.**



2 **Display "SELECT SEARCH MODE."**
1) Press INDEX/ M/A SKIP.*



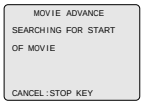
- If you inserted a cassette with the record tab or if you selected "INDEX/ SEARCH" .

3 **Display MOVIE ADVANCE.**
1) Press ▲▼ to select.
2) Press ▶ to set.

4 **Select GO TO START OF MOVIE or GO TO PREVIEW.**
Press ▲▼ to select.

Select "GO TO START OF MOVIE," if you want to advance directly to beginning of the movie.
--> continue with step 5.
Select "GO TO PREVIEW," if you want to view the first (next) preview.
--> go to "To Search for Preview" at right.

5 **Start searching.**
Press ▶ .
- To cancel, press STOP.



When the movie is found...

6 **Start playback.**
Press PLAY.
- To cancel, press STOP.
- The display will time out after 3 minutes and the VCR will enter the Stop mode..

To Search for Preview.

You can override the operation of MOVIE ADVANCE™ SEARCH FOR PREVIEWS mode by pressing MA SKIP during tape searching. MOVIE ADVANCE™ works by searching the tape past each preview and then reversing back to the start of the detected preview. While the tape is reversing back, if INDEX/ M/A SKIP is pressed, MOVIE ADVANCE™ will begin searching for the next preview. While searching for the next preview, if you see the start of a preview which you wish to watch, press MA SKIP and MOVIE ADVANCE™ will immediately reverse back to the start of that preview, instead of searching further past the preview start point. Once the VCR is playing a preview, press MA SKIP to advance to the next preview, long commercial or the start of the movie (whichever is next).

a **Start preview searching.**
1) In step 4 at left, select Go To PREVIEW.
2) Press ▶.
- If you want to playback, press PLAY.

When a preview is detected, VCR will start playback.

b **Start next preview searching.**
1) Press INDEX/ M/A SKIP.
- To cancel, press STOP.

Tape Operation (continued)

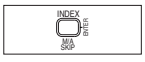
VHS Index Search System

Each time recording is made, an invisible index mark is placed on the tape. When timer recordings are made, program index and information are also included. These index marks can be used to access or scan recordings.

Direct Access (For normal and /or timer recordings)

Go directly to desired recording.

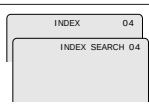
1 **Display SELECT SEARCH MODE.**
Press INDEX/ M/A SKIP.*
- If there are no timer recordings on the Program Index List, go to step 3.

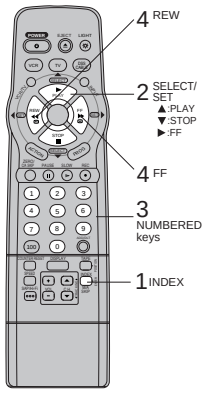


2 **Display INDEX.**
1) Press ▲▼ to select.
2) Press ▶ to display.
- This screen appears only if there are timer recordings.

3 **Select the recording number.**
Press NUMBERED keys.
- To calculate number, see below.

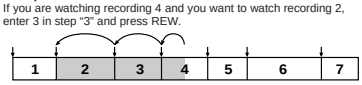
4 **Start search.**
Press FF or REW.
- When search is finished, playback begins.



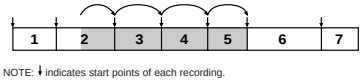


■ To Calculate Index Number

Example 1:
If you are watching recording 4 and you want to watch recording 2, enter 3 in step "3" and press REW.



Example 2:
If you are watching recording 2 and you want to watch recording 6, enter 4 in step "3" and press FF.



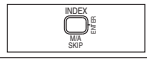
NOTE: ↓ indicates start points of each recording.

Notes
- Make each entry within 10 seconds, or the Index Search mode will be canceled.
- If Direct Access or Index Scan is started very close to an index mark, that index mark may not be counted in the search.

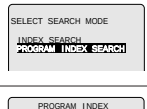
Program Index Search (For timer recordings only)

Choose a timer recorded program from a Program Index List. **When the tape is ejected or normal recording is started, all program index data is deleted.**

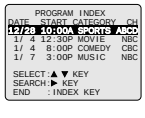
1 **Display SELECT SEARCH MODE.**
Press INDEX/ M/A SKIP.

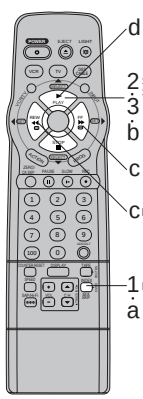


2 **Display PROGRAM INDEX.**
1) Press ▲▼ to select.
2) Press ▶ to display.



3 **Select the desired recorded program.**
1) Press ▲▼ to select.
2) Press ▶ to start the forward or rewind search.
- When search is finished, playback begins.

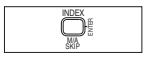




Index Scan (For normal and /or timer recordings)

In Play mode, the first 10 seconds of each recording can be scanned (forward or reverse).

a **Display SELECT SEARCH MODE.**
Press INDEX/ M/A SKIP.
- If there are no timer recordings on the Program Index List, go to step c.

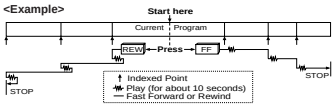


b **Display INDEX.**
1) Press ▲▼ to select.
2) Press ▶ to display.

c **Start scan.**
Press FF or REW.

d **Cancel scan, start playback.**
Press PLAY.
- To stop, press STOP.

<Example>



Auto Operation Functions

■ Auto Playback
Tape insert --> Power turn on --> --> Start playback if record tab (see page 36.) is removed.

■ Auto Rewind
Playback / Manual Record / Fast Forward --> Tape end --> -->Rewind (Auto)

■ Playback Auto Eject (Repeat Play is "OFF")
Playback --> Rewind --> -->Tape eject (Without record tab)

■ Memory Rewind Off
Rewind --> Press POWER --> -->Turn off after complete

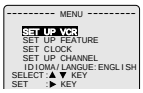
Tape Operation (continued)

Repeat Play

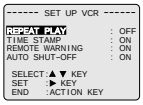
Set to see a recording over and over.

1 **Display menu.**
Press ACTION.*

2 **Display SET UP VCR.**
1) Press ▲▼ to select.
2) Press ▶ to display.



3 **Set ON or OFF.**
1) Press ▲▼ to select "REPEAT PLAY."
2) Press ▶ to set.



- Playback repeats when tape end is reached or unrecorded portion over 30 seconds is detected.

4 **Return to normal screen.**
Press ACTION twice.

Zero Search

To quickly return to specific tape counter location.

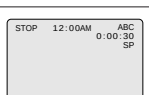
a **Display Counter.**
Press DISPLAY during playback.

b **Reset to "0:00:00."**
Press COUNTER RESET at the desired position.

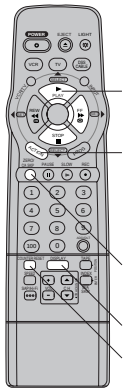
c **Continue playback, rewind, or fast forward.**

d **Return to "0:00:00."**
Press ZERO/ C/A SKIP in Stop mode.

- The VCR will go into FF or REW mode and stop at the last point the Counter was set to 0:00:00.

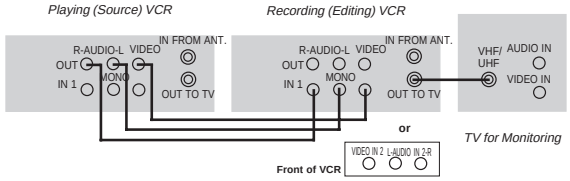


***Important:**
If the remote control POWER, ACTION, PROG, CH ▲/▼, INDEX/ M/A SKIP, NUMBERED keys, INPUT, TAPE POSITION, or ADD/ DLT button does not work when pressed, press the VCR button on the remote and try the button again.



Copying Your Tapes (Dubbing)

Connections you'll need to make. (Choose front or rear connection.)



	Playing (Source) VCR	Recording (Editing) VCR
1	**Insert pre-recorded tape.**	**Insert blank tape with record tab.**
2	———	**Select LINE mode.** Press INPUT. (See "Selecting the Input Mode" below.)
3	**Put in Standby mode.** Press PLAY, then PAUSE at starting point.	**Put in Standby mode.** Press REC, then PAUSE immediately.
4	**Start dubbing.** Press PAUSE.	**Start dubbing.** Press PAUSE.
5	**Stop dubbing.** Press STOP.	**Stop dubbing.** Press STOP.

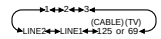
■ To Monitor Dubbing on Your TV

1 Turn your TV on and tune to the Recording VCR channel (CH3 or CH4).
2 Set the VCR/ TV Selector on the Recording VCR to "VCR."

Note Dubbing tapes protected with Copy Guard will have poor quality results.

■ Selecting the Input Mode

Method 1: Press INPUT.
Channel Number <--> LINE1 <--> LINE2
Method 2: Press CH ▲/▼. Display will change as below.



- "LINE1" or "LINE2" displays on Multi-Function Display (about 4 sec.) when LINE1 or LINE2 is selected.
- LINE1: For rear audio/video connection.
  LINE2: For front audio/video connection.

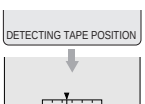
Caution: **Unauthorized exchanging and/or copying of copyrighted recordings may be copyright infringement.**

Special VCR Features

Tape Position Display Feature

To find out the present tape position.
Tape position cannot be found for C-Cassette type and tape of less than 60 minutes.

1 **Detect Tape Position.**
Press TAPE POSITION.*

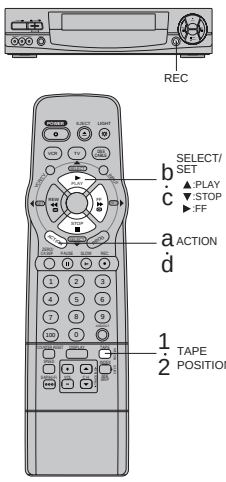


- Detecting tape position is only displayed when cassette is first inserted.
- It takes several seconds for correct indication to appear.
- Indication is standard.

2 **Return to normal screen.**
Press TAPE POSITION.

Check list before you begin.

- ☐ All connections are made.
- ☐ VCR is plugged in.
- ☐ TV is turned on and set to the VCR channel (CH 3 or 4).

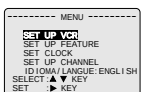


Remote Warning ON/OFF Feature

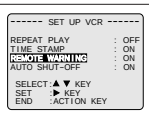
If Multi-brand feature is used (page 20),and this feature is set to on, a warning appears whenever an invalid key is pressed in TV, DSS, or Cable mode.

a **Display menu.**
Press ACTION.

b **Display SET UP VCR.**
1) Press ▲▼ to select.
2) Press ▶ to display.



c **Set ON or OFF.**
1) Press ▲▼ to select.
2) Press ▶ to set.

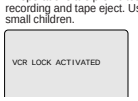


- "OFF" --> Remote Warning will not appear even if invalid key is pressed.

d **Return to normal screen.**
Press ACTION twice.

VCR Lock Feature

All operations are prohibited except timer recording and tape eject. Useful for families with small children.



To turn ON:
In Stop mode, hold down REC on the VCR without a cassette inserted for 7 seconds.

To turn OFF:
Repeat above.

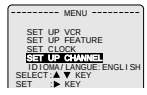
- VCR Lock is canceled automatically after 24 hours if clock is set.

Weak Signal Display ON/OFF Feature

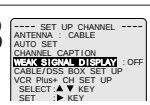
When "ON" is selected, picture is displayed even when broadcast signal is weak or nonexistent.

1 **Display menu.**
Press ACTION.

2 **Display SET UP CHANNEL.**
1) Press ▲▼ to select.
2) Press ▶ to display.

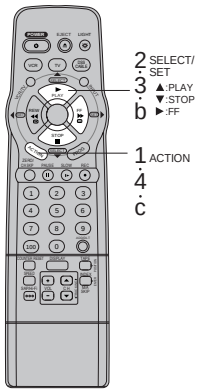


3 **Set ON or OFF.**
1) Press ▲▼ to select.
2) Press ▶ to set.



- ON --> Picture is displayed regardless of signal condition, and may not always be clearly visible.
  OFF --> Screen turns solid blue when signal is absent or weak.
- If VCR is connected to equipment which has blue back feature, selecting ON will have no effect on the other equipment.

4 **Return to normal screen.**
Press ACTION twice.

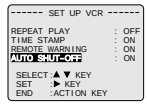


Auto Shut-Off Feature

When "ON" is selected, VCR shuts itself off when playback of a blank portion of tape continues or no signal (except when LINE is selected) is detected for over 5 minutes.

a **Repeat step "a" and "b" on page 36 to display SET UP VCR.**

b **Set ON or OFF.**
1) Press ▲▼ to select.
2) Press ▶ to set.



c **Return to normal screen.**
Press ACTION twice.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z

KEY DATA IN	SCAN	
	SCAN 1 (PIN 93)	SCAN 2 (PIN 94)
KEY DATA 8 (PIN 4)	-----	STOP /EJECT
KEY DATA 9 (PIN 26)	-----	FF /CUE
KEY DATA 10 (PIN 40)	CH DOWN	REW /REV
KEY DATA 11 (PIN 41)	CH UP	-----
KEY DATA 12 (PIN 45)	POWER	REC /TIME
KEY DATA 13 (PIN 46)	TV/VCR	-----

REC VIDEO SIGNAL
PB VIDEO SIGNAL
CAPSTAN SERVO
CYLINDER SERVO

UNLESS OTHERWISE SPECIFIED;
PNP TRANSISTORS IS 2SB709A,
NPN TRANSISTORS IS 2SD601A,
DIODES IS MA165
SWITCHES IS EVQ21309K AND
WATTAGE OF RESISTORS IS 1/10W.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z

REC VIDEO SIGNAL
PB VIDEO SIGNAL
REC AUDIO SIGNAL
PB AUDIO SIGNAL
CYLINDER SERVO

IC3201 MN3890S (CCD 1H DELAY)
IC3101 MN3885S (CCD 1H DELAY)
Q3201 IMZ1 (PHASE COMPENSATOR)
Q3202 (AMP)
CNR GAIN R3205 1KB
CNR PHASE R3204 2KB
IC3001 AN3479FBP VIDEO/AUDIO PROCESS
REC/PB CHROMINANCE SIGNAL PROCESS
REC/PB LUMINANCE SIGNAL PROCESS
SYNC SEPARATION
S-VHS/VHS DET
Y/C MIX
I2C CONTROL
Q3010 UN2212 (AI PICTURE SWITCHING)
Q3150 2SC2404 (S-VHS PEAKING AMP)
Q3151 2SC2404 (BUFFER)
Q3875 2SA1037K146R (BUFFER)
Q3001 2SA1037K146R (BUFFER)
Q4101 2SC2412K1 (BIAS OSC)
Q4001 2SA1576A106R (AUDIO DELAY REC ON-OFF)
Q4002 2SD1819A(R,S) (AUDIO DELAY REC ON-OFF)
Q4003 2SD1819A(R,S) (AUDIO DELAY REC ON-OFF)
Q4004 DTA114TU (AUDIO MUTE)
Q4005 DTC114TU (AUDIO MUTE)
Q4006 DTC114TU (AUDIO MUTE)
Q4007 DTC114TU (AUDIO MUTE)
IC4151 UPD4053BG (INPUT SELECT)
U7001 UHF/VHF TUNER/TV DEMODULATOR UNIT VEQS0611
SW7001 VSSS0152
X3010 VSXS0195

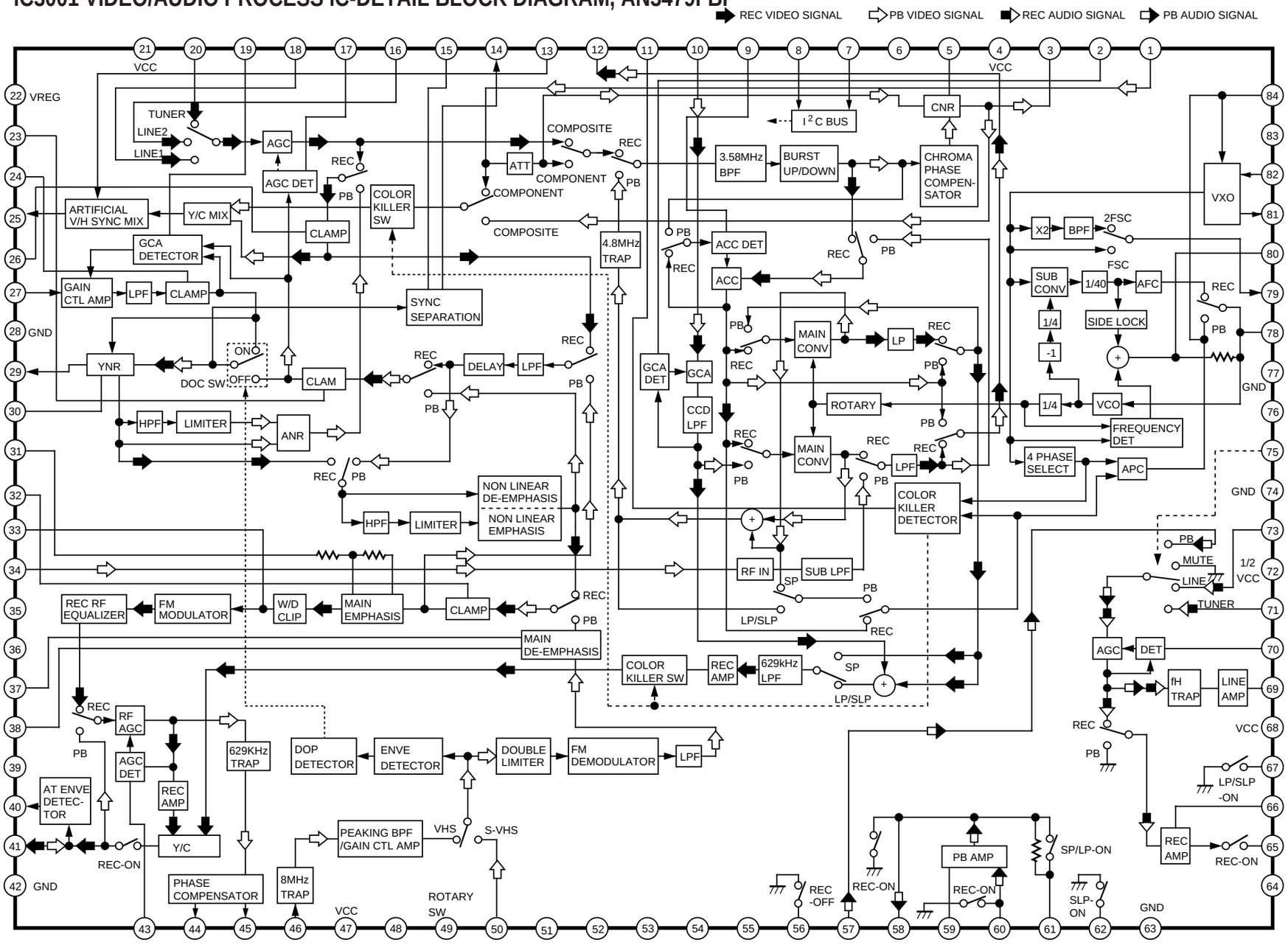
TO MAIN I: I2C SERIAL CLOCK 73, I2C SERIAL DATA 74, V-LOCK PULSE 6; ENV-VOLTAGE 66; HEAD AMP SW 106, CUE/REV/SS(L) 103; Hi-Fi D-REC(H) 108, DELAY REC +12V 109, REC AUDIO 89, PB AUDIO 90, Hi-Fi HEAD SW 91, SW +5V(VIDEO) 80; UNSW +14V 76; CYL PG/FG 31, CYL ERROR 30, PB(L) 32, HEAD SW 36, CUE/REV/SS(L) 44, HEAD AMP SW 53, ENV-DET 52; 21 VIDEO, 20 VIDEO; 97 AUDIO R CH, 96 AUDIO L CH
TO MAIN II: VIDEO VCC 19
TO MAIN IV: NORMAL AUDIO 101; AUDIO 1 R CH 100, AUDIO 1 L CH 99, NORMAL AUDIO 98; AUDIO 2 R CH 85, AUDIO 2 R CH 107; 95 RF AUDIO
TO MAIN V: VIDEO 102, AUDIO 105; VIDEO 2 75; AUDIO 2 R CH 85, AUDIO 2 R CH 107
TO MAIN VI: HEAD AMP SW 106, CUE/REV/SS(L) 103
TO MAIN III: UNSW +14V 76; 81 AUDIO -5V
TO MAIN V: INPUT SELECT 2 5
TO MAIN IV: Hi-Fi D-REC(H) 108, DELAY REC +12V 109, REC AUDIO 89, PB AUDIO 90, Hi-Fi HEAD SW 91, SW +5V(VIDEO) 80
TO MAIN III: UNSW +14V 76
TO MAIN I: CYL PG/FG 31, CYL ERROR 30, PB(L) 32, HEAD SW 36, CUE/REV/SS(L) 44, HEAD AMP SW 53, ENV-DET 52

P3001 TO HEAD AMP C.B.A. P3501: ENV-DET, HEAD AMP SW, CUE/REV/SS(L), DELAY REC +12V, REC/PB VIDEO, HEAD SW, GND, SW +12V, PB(L), GND, CYL ERROR, UNSW +5V(SYS.CTL), CYL PG/FG, GND, UNSW +14V, SW +5V(VIDEO), Hi-Fi HEAD SW, PB AUDIO, REC AUDIO, Hi-Fi D-REC(H)
UNSW +5V(SYS.CTL), SW +12V → TO MAIN III
AIP CTL, ROTARY SW → TO MAIN I
SW +5V(VIDEO), PB AUDIO → TO MAIN VI
AUDIO HEAD, AUDIO HEAD → TO MAIN I
FULL ERASE HEAD UNIT P4001: GND, FE-HEAD
AUDIO ERASE HEAD, AUDIO ERASE HEAD → TO MAIN I
J3002, J3003
DELAY REC +12V, A-MUTE(H) → TO MAIN I
TUNER AUDIO → TO MAIN IV
SIF OUT → TO MAIN IV
AFC, SIGNAL(L) → TO MAIN I
UNSW +33V, CH FREQUENCY LOCK(L), SERIAL CLOCK 0, SERIAL DATA 0, DTS CS(H) → TO MAIN III / TO MAIN I
TV(H)/VCR(L) → TO MAIN I

UNLESS OTHERWISE SPECIFIED;
PNP TRANSISTORS IS 2SB709A,
NPN TRANSISTORS IS 2SD601A AND
WATTAGE OF RESISTORS IS 1/10W.

MAIN C.B.A.
VJBS6052 A
VJBS6055 B

IC3001 VIDEO/AUDIO PROCESS IC-DETAIL BLOCK DIAGRAM, AN3479FBP



CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.6A 125V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D'T INCENDIE N'I UTILISERQUE DES FUSIBLE DE MÉME
TYPE 1.6A 125V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

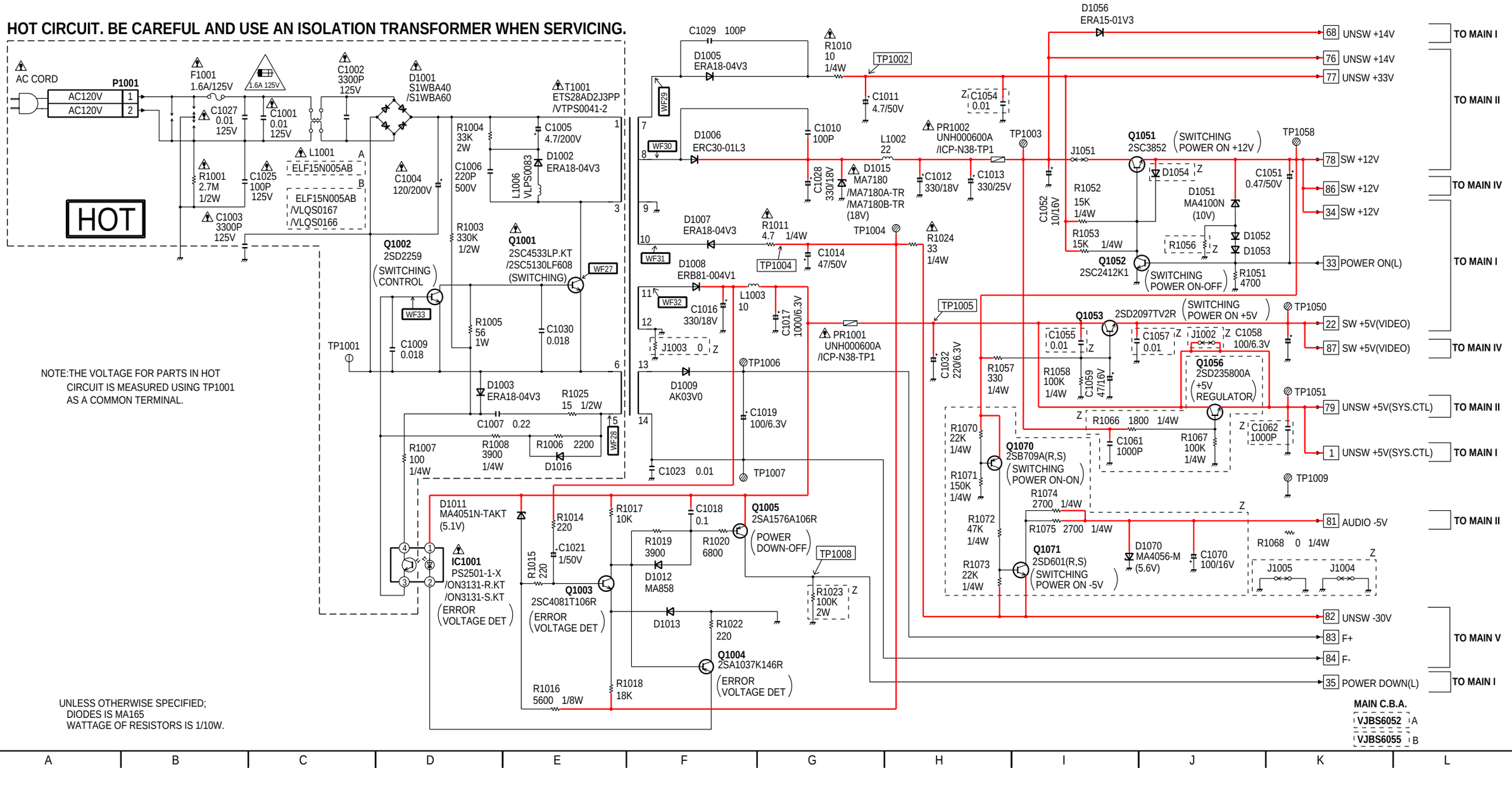
COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z

HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.

NOTE:THE VOLTAGE FOR PARTS IN HOT
CIRCUIT IS MEASURED USING TP1001
AS A COMMON TERMINAL.

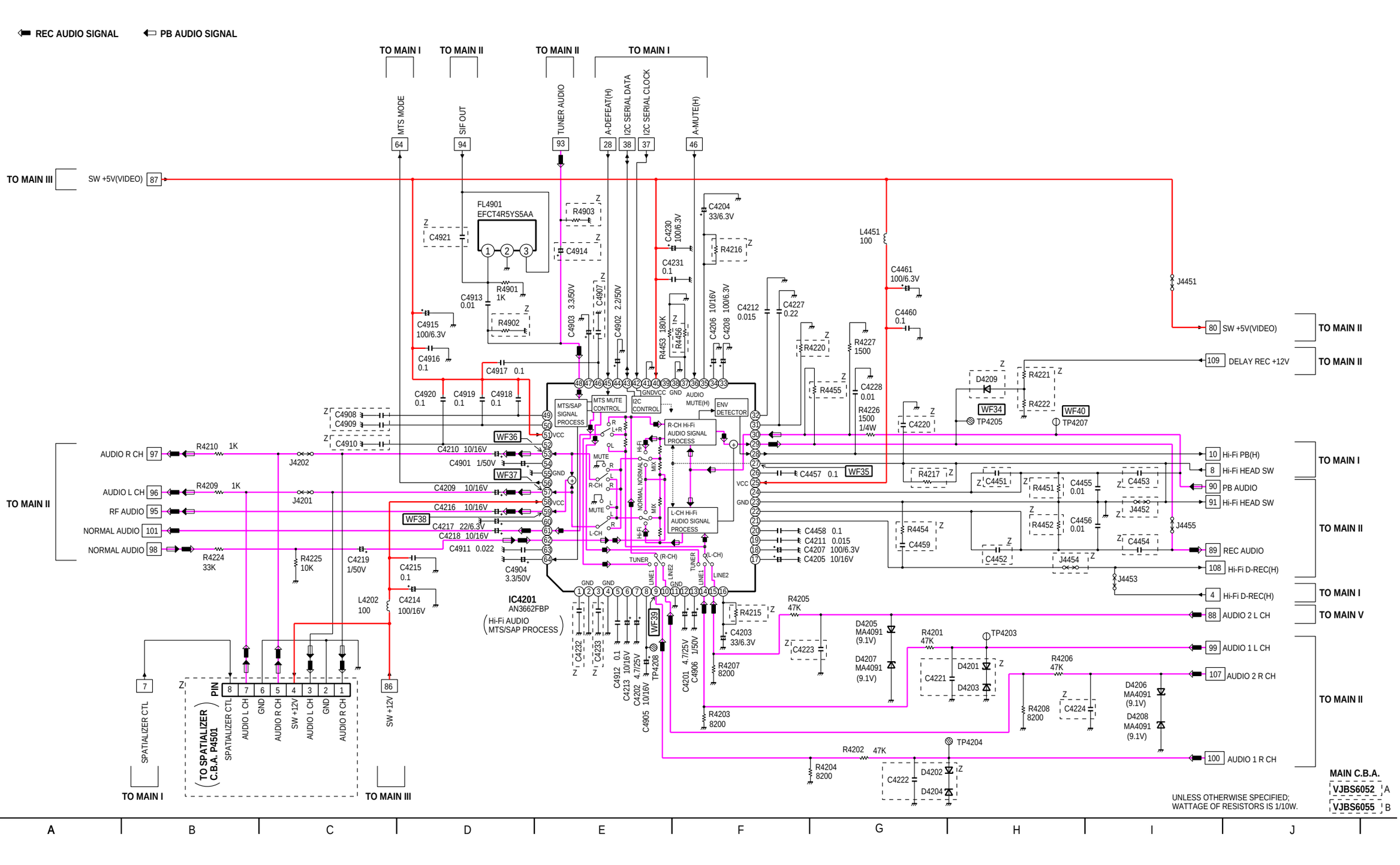
UNLESS OTHERWISE SPECIFIED;
DIODES IS MA165
WATTAGE OF RESISTORS IS 1/10W.



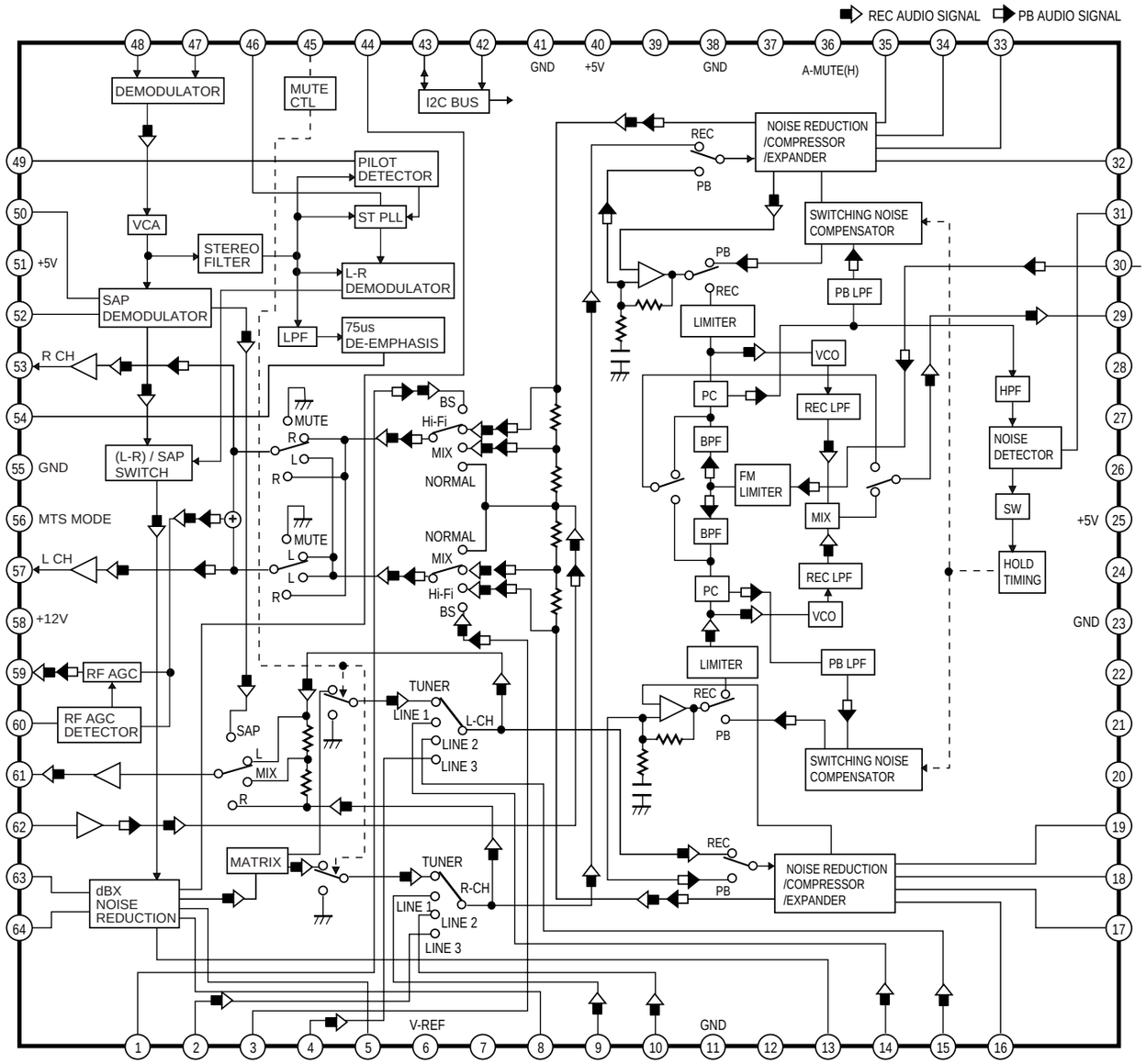
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z



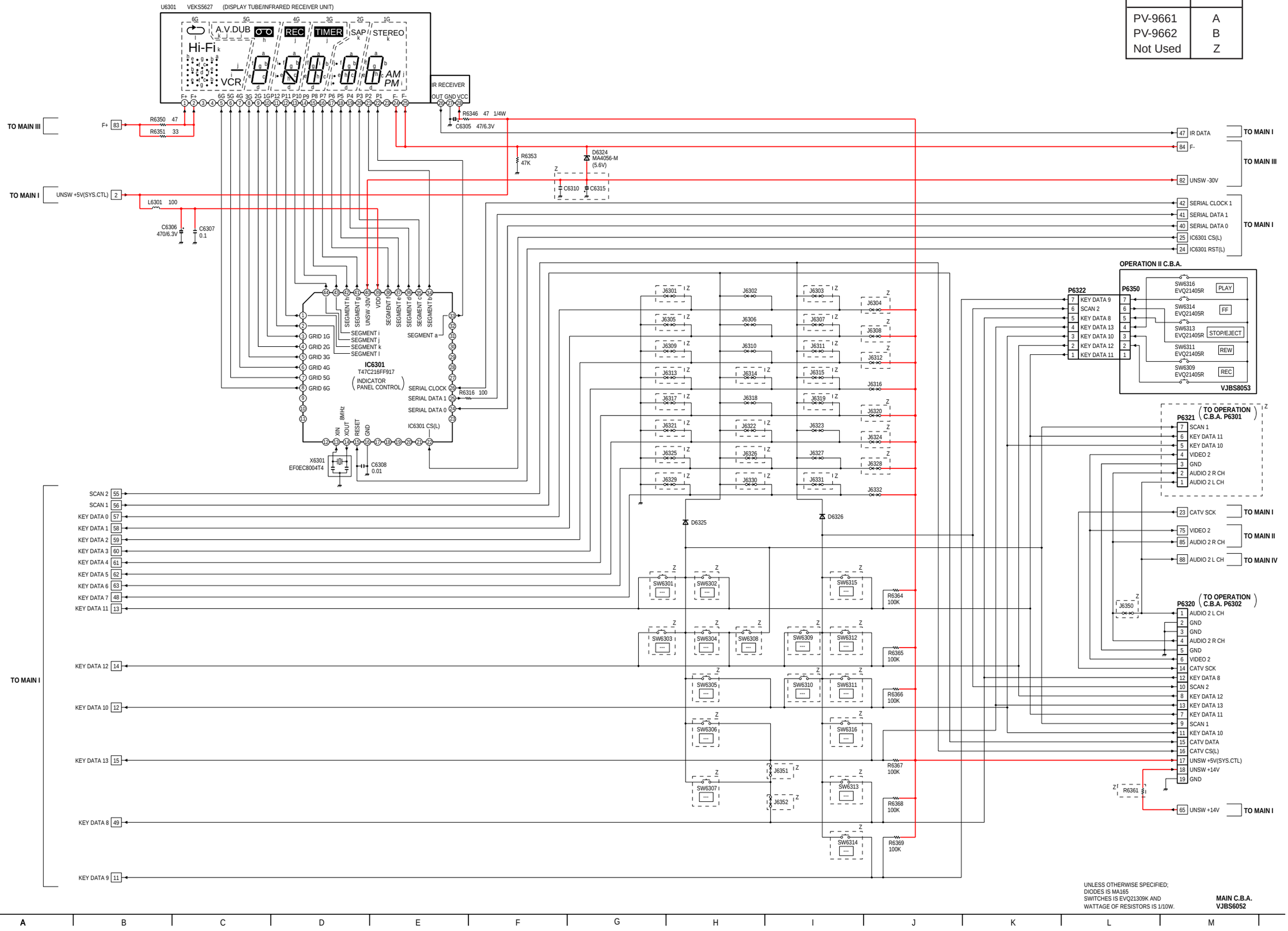
IC4201 Hi-Fi AUDIO MTS/SAP PROCESS IC-DETAIL BLOCK DIAGRAM, AN3662FBP



NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

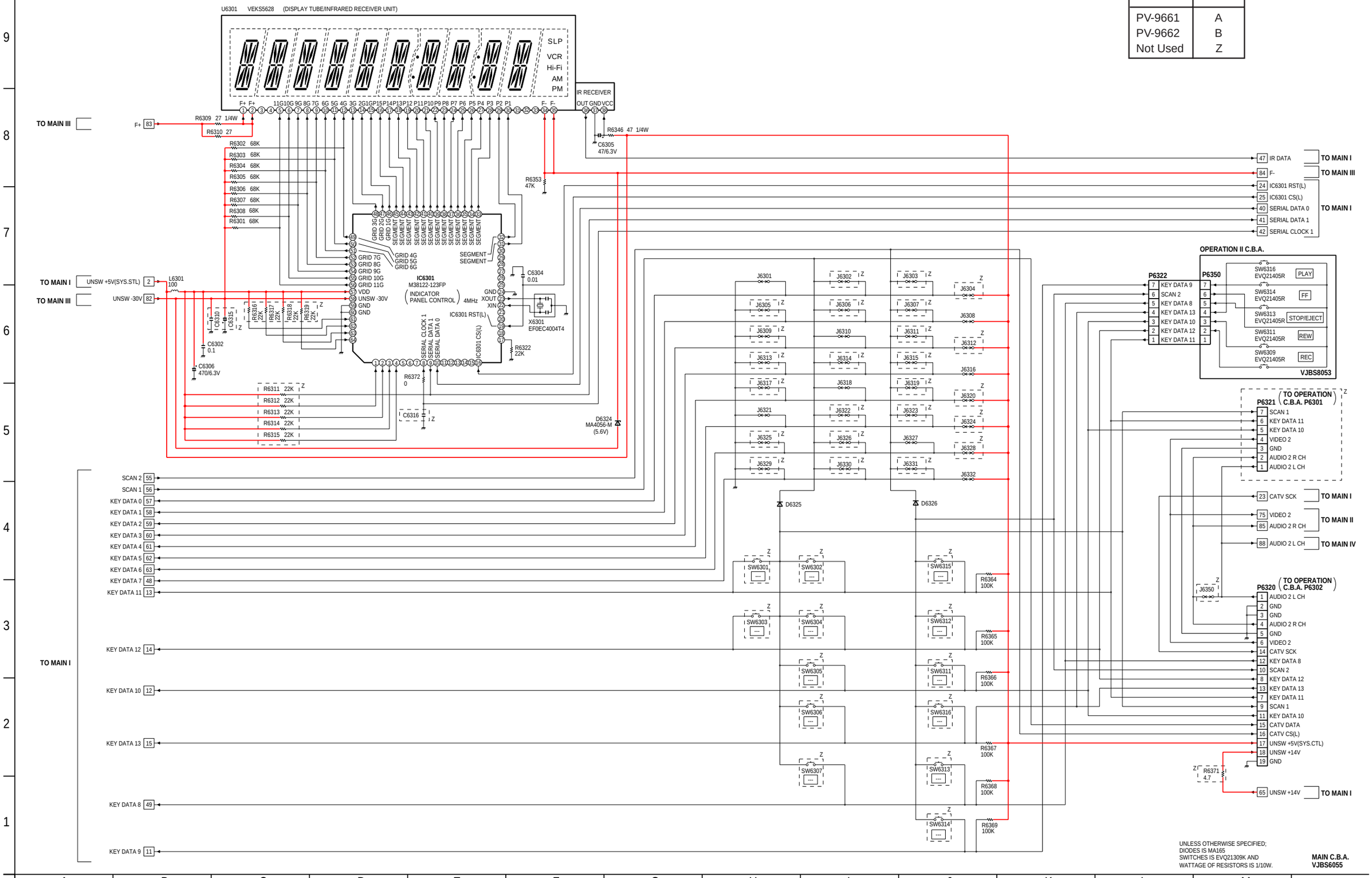
MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z



NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z

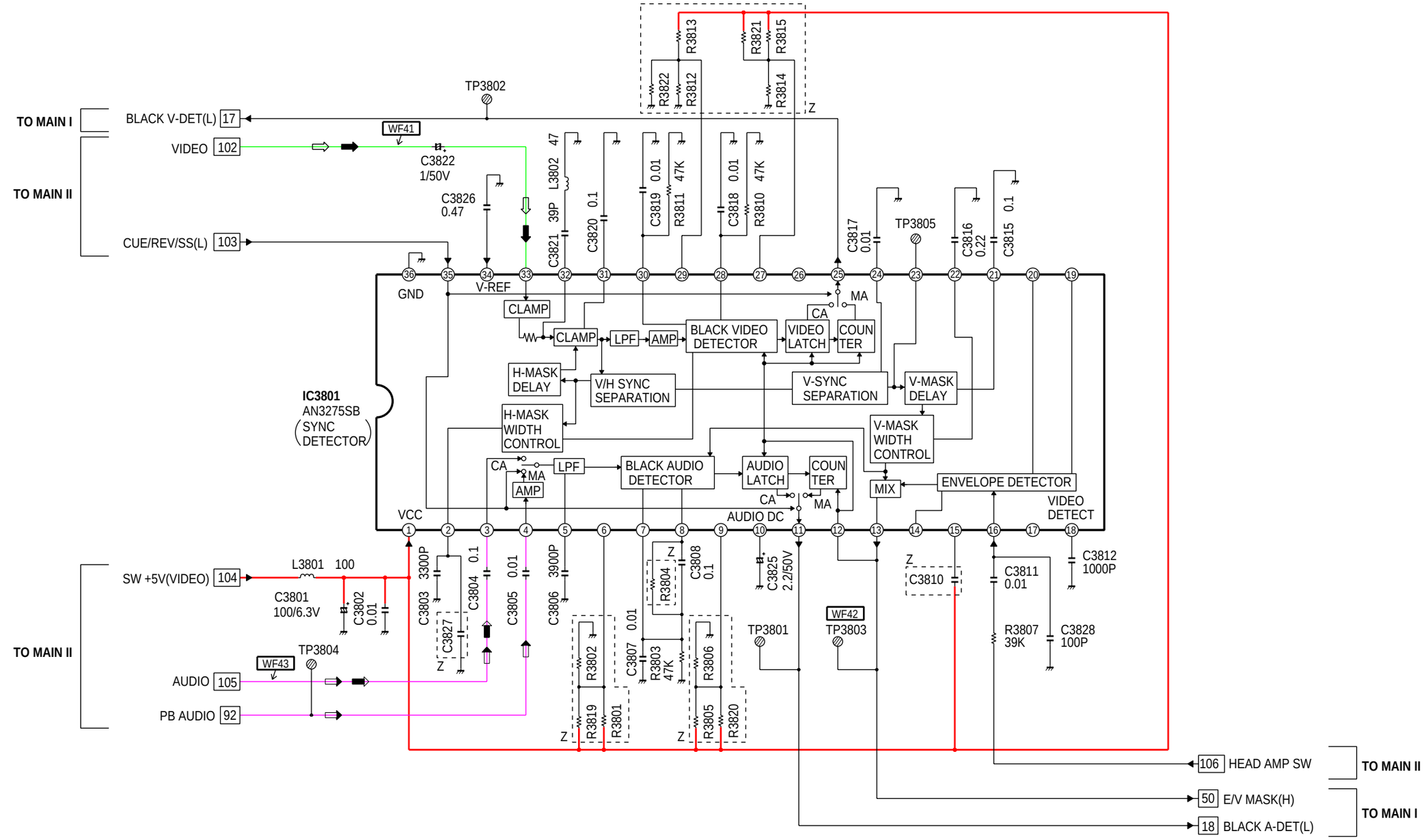


NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z

REC VIDEO SIGNAL
PB VIDEO SIGNAL
REC AUDIO SIGNAL
PB AUDIO SIGNAL



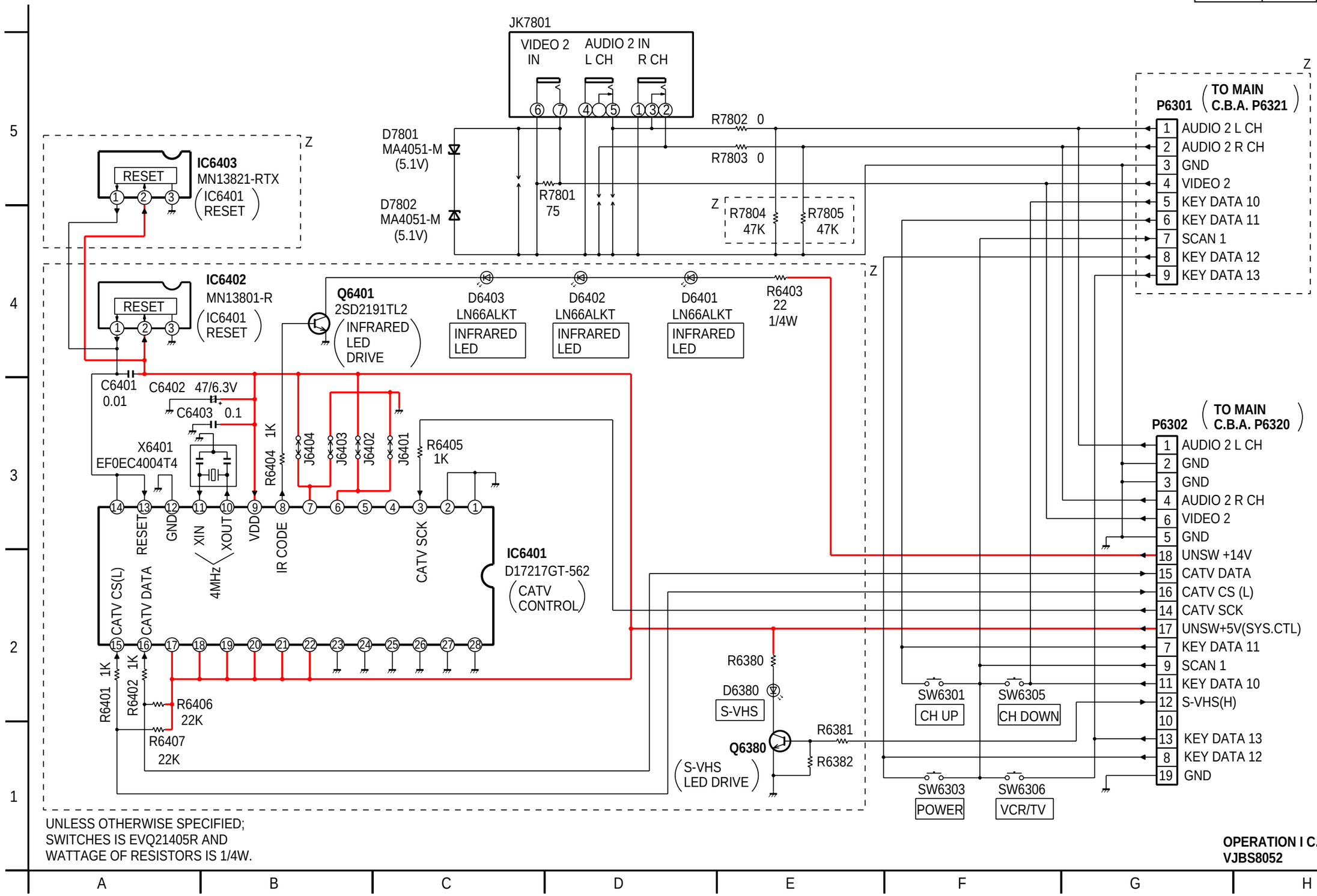
UNLESS OTHERWISE SPECIFIED;
WATTAGE OF RESISTORS IS 1/10W.

MAIN C.B.A.
VJBS6055

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z

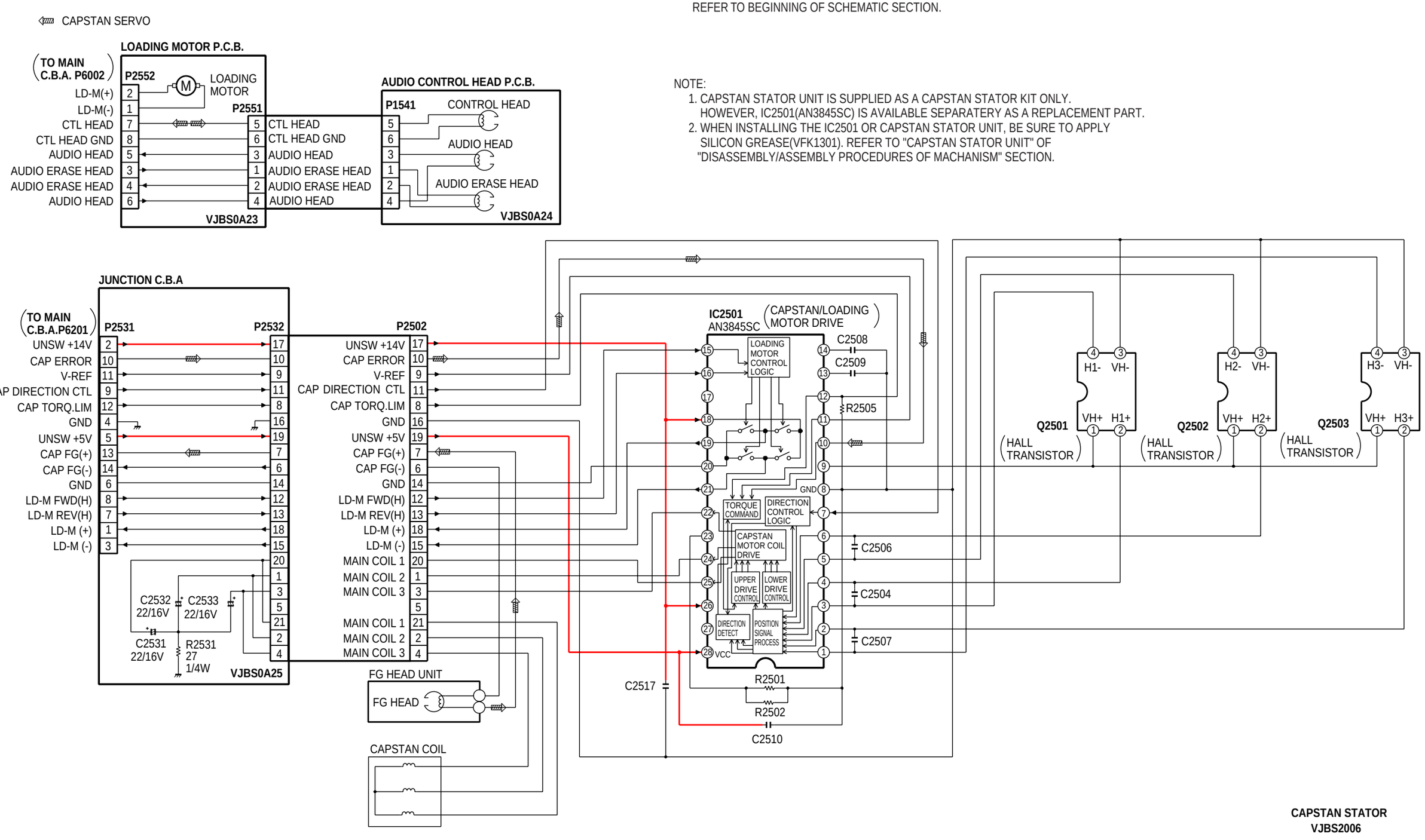


UNLESS OTHERWISE SPECIFIED;
SWITCHES IS EVQ21405R AND
WATTAGE OF RESISTORS IS 1/4W.

OPERATION I C.B.A.
VJBS8052

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
1. CAPSTAN STATOR UNIT IS SUPPLIED AS A CAPSTAN STATOR KIT ONLY.
HOWEVER, IC2501(AN3845SC) IS AVAILABLE SEPARATERY AS A REPLACEMENT PART.
2. WHEN INSTALLING THE IC2501 OR CAPSTAN STATOR UNIT, BE SURE TO APPLY
SILICON GREASE(VFK1301). REFER TO "CAPSTAN STATOR UNIT" OF
"DISASSEMBLY/ASSEMBLY PROCEDURES OF MACHANISM" SECTION.

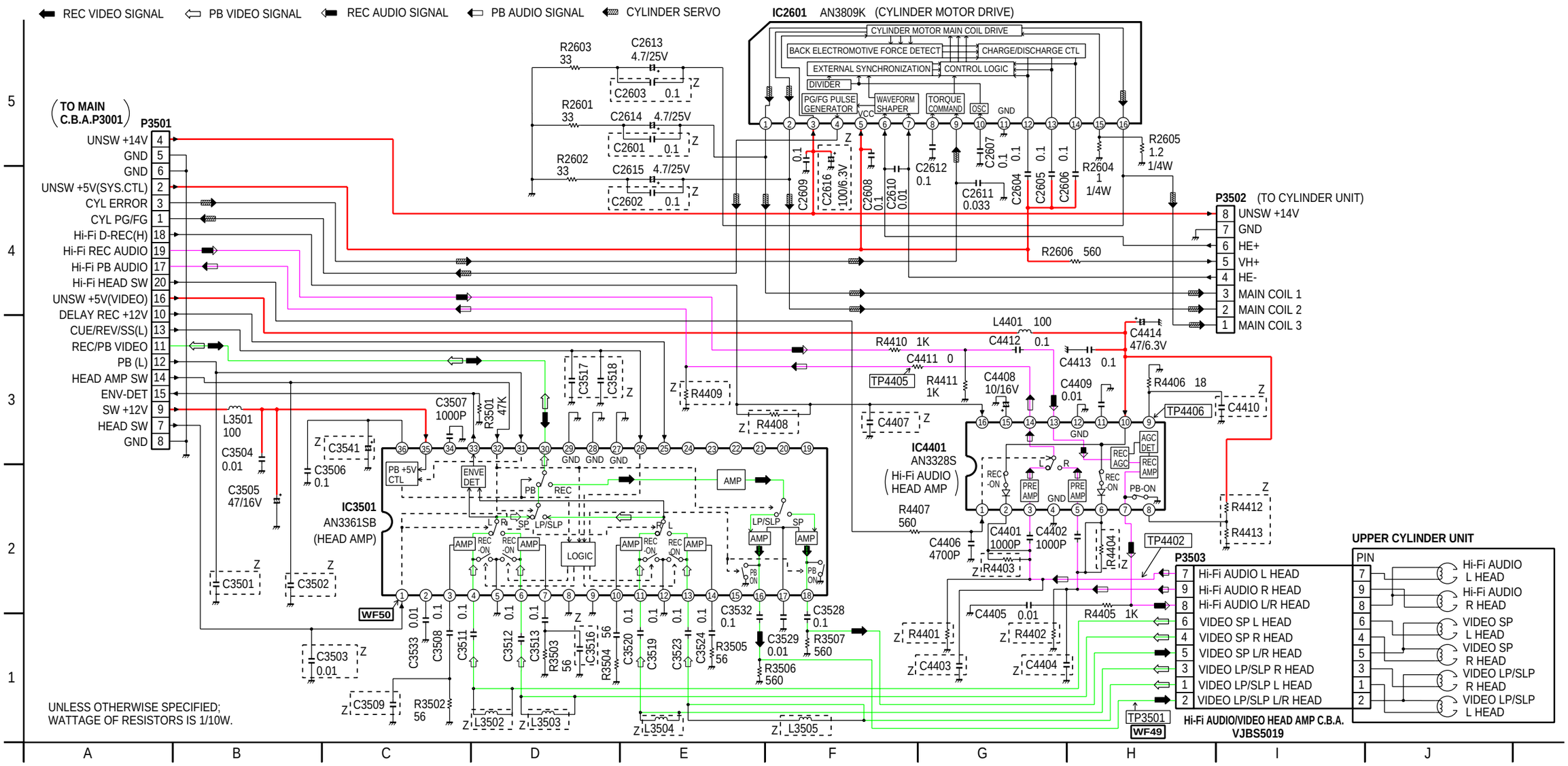


CAPSTAN STATOR
VJBS2006

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z



1. **Important safety notice**
   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components. Use only the specified parts.

2. Do not use the part number shown on this drawing for ordering.
The correct part number is shown in the parts list, and may be slightly different or amended since this drawing was prepared.

3. Use only original replacement parts:
   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Parts different in shape or size may be used.
   However, only interchangeable parts will be supplied as service replacement parts.

5. Test point information
   ⏀ :Test point with a jumper wire across a hole in P.C.B.
   ▭→ :Test point with a component lead on the foil side.
   ▨ :Test point with no test pin.
   ● :Test point with a test pin.

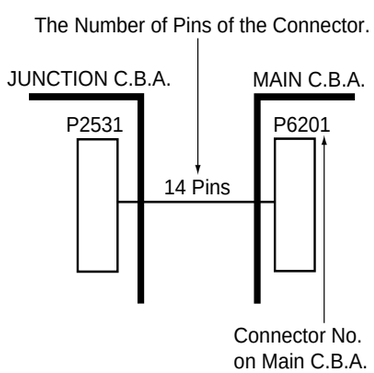
Schematic Diagram Notes

1. Indication for Zener Voltage of Zener Diodes
   The Zener Voltage of Zener Diodes are indicated as such on Schematic Diagrams.

   Example:
   (6.2V).....Zener Voltage

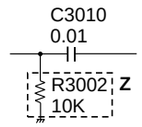
2. How to identify Connectors
   Each connector is labeled with a Connector No. and Pin No. Indicating what it is connected to, in other words, its counter part.
   Use the interconnection schematic diagram to find the connection between associated connectors.

   Example:
   The connections between C.B.A.s are shown below.



3. Parts enclosed in dashed lines marked "Z" are not used in any models included in this service manual.

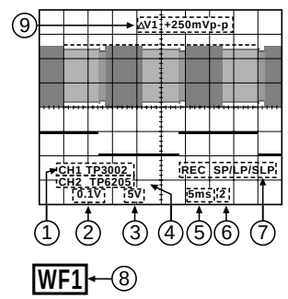
   Example:



4. The part number shown on this drawing is only main part number, except for safety parts. Be sure to make your orders of replacement parts according to the parts list.

Signal Waveform Note

How to read Signal Waveform



① Connecting Point
② Volts/Div
③ Volts/Div
④ Connecting Point
⑤ Time/Div
⑥ Trigger Channel of the scope (1:CH1,2:CH2)
⑦ Operation Mode of VCR
⑧ Waveform Point on Schematic
⑨ ΔV1:Peak to Peak

Voltage Chart Note

Voltage Measurement
a. Color bar signal in SP mode.
b. ---:Unmeasurable or not necessary to measure.

Circuit Board Layout Note

Circuit Board Layout shows components installed for various models.
For proper parts content for the model you are servicing,
please refer to the schematic diagram and parts list.

NOTE:
Circuit Board Layout includes components which are not used.

Comparison chart of models & marks

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z

Note : Refer to item 3 of Schematic Diagram Notes for mark "Z".

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B

MAIN CIRCUIT

MODE / PIN NO.	REC	PLAY
IC1001		
1	5.1	5.1
2	4.4	4.4
3	-54.0	-54.0
4	-54.0	-54.0
IC3001		
1	5.1	5.1
2	3.4	3.4
3	---	---
4	5.1	5.1
5	4.3	4.3
6	---	---
7	5.2	5.2
8	5.2	5.2
9	2.2	2.2
10	2.8	2.8
11	0.8	0.8
12	2.8	2.8
13	0.4	0.4
14	0.5	0.5
15	0	0.9
16	---	---
17	2.4	1.8
18	3.1	5.7
19	2.6	2.6
20	3.1	4.0
21	5.1	5.1
22	0	2.0
23	2.6	2.4
24	2.6	2.4
25	2.0	2.0
26	2.6	2.5
27	2.0	2.0
28	0	0
29	1.9	1.8
30	1.9	1.6
31	2.0	1.2
32	2.4	2.4
33	2.7	2.7
34	3.0	2.8
35	---	---
36	---	---
37	0	1.5
38	4.4	2.3
39	---	---
40	3.4	2.9
41	0	0
42	0	0
43	3.4	3.3
44	2.6	2.6
45	2.6	2.6
46	2.6	2.6
47	5.0	5.0
48	---	---

MODE / PIN NO.	REC	PLAY
49	2.7	2.7
50	---	---
51	5.0	5.0
52	---	---
53	2.5	2.5
54	---	---
55	---	---
56	0.1	4.4
57	0	2.6
58	2.6	2.6
59	2.6	2.6
60	2.6	2.6
61	2.6	2.6
62	0	0
63	0	0
64	---	---
65	2.6	2.6
66	0	2.6
67	2.6	0
68	5.2	0
69	2.6	0
70	0.3	0
71	2.6	2.6
72	2.6	0
73	2.6	2.6
74	0	0
75	0	0
76	3.3	0
77	0	0
78	2.1	0
79	3.0	0
80	0	2.0
81	---	---
82	---	---
83	2.6	0
84	2.5	0
IC3101		
1	3.4	3.4
2	5.1	5.1
3	0	0
4	2.5	2.5
5	2.5	2.5
6	-2.7	-2.7
7	2.1	2.1
8	3.0	3.0
IC3801		
1	5.0	5.0
2	1.0	0.9
3	2.9	3.0
4	2.9	3.0
5	2.3	2.3
6	---	---
7	3.0	3.0
8	0	0

MODE / PIN NO.	REC	PLAY
9	---	---
10	3.0	3.0
11	4.9	4.9
12	1.3	1.3
13	1.3	1.3
14	4.5	4.5
15	1.0	1.0
16	4.7	4.7
17	2.8	2.8
18	0.6	0.6
19	1.8	1.8
20	1.9	2.0
21	3.2	3.2
22	1.7	1.7
23	---	---
24	1.7	1.7
25	4.9	4.9
26	---	---
27	---	---
28	2.9	2.9
29	2.5	2.5
30	3.1	3.1
31	3.0	3.1
32	2.3	2.4
33	2.8	2.8
34	2.9	2.9
35	5.0	5.0
36	0	0
IC4201		
1	---	---
2	0	0
3	---	---
4	0	0
5	2.3	0
6	2.6	2.6
7	0	2.1
8	0.4	0.4
9	0	0
10	0	0
11	0	0
12	0	2.1
13	0	2.3
14	0	0
15	0	0
16	0	2.6
17	0	0.9
18	0	2.6
19	0	0
20	0	0
21	0	0
22	0	0.7
23	0	0
24	2.7	0
25	0	0

MODE / PIN NO.	REC	PLAY
26	2.7	0
27	0	0
28	0	0
29	0	1.8
30	0	0
31	0	0
32	0	0
33	2.6	2.6
34	0.9	0.5
35	2.6	2.6
36	0	0
37	2.0	2.0
38	0	0
39	---	---
40	5.1	5.1
41	2.4	2.4
42	5.1	5.2
43	5.3	5.3
44	2.4	2.4
45	5.0	5.0
46	3.6	3.6
47	2.4	2.4
48	2.2	0
49	0	0
50	0	3.4
51	0	0
52	0	3.6
53	0	6.1
54	0	0
55	0	0
56	0	0
57	0	0
58	0	12.0
59	6.2	0
60	0	0
61	0	0
62	0	2.5
63	2.4	0
64	0.5	0
IC6001		
1	5.2	5.2
2	---	---
3	5.3	5.3
4	5.0	5.1
5	5.0	5.0
6	0	0
7	0	0
8	0	0
9	4.8	0
10	0.5	5.0
11	5.0	0
12	---	---
13	5.0	0
14	5.1	0

MODE / PIN NO.	REC	PLAY
15	5.2	5.2
16	2.2	0.6
17	5.2	5.2
18	5.2	5.2
19	---	---
20	0.2	4.9
21	0	0
22	2.2	2.3
23	2.5	2.5
24	0	0
25	5.0	5.0
26	5.0	5.1
27	0	2.5
28	0	0
29	4.7	4.7
30	5.0	0
31	0.1	0
32	---	---
33	2.2	2.0
34	2.4	2.4
35	1.8	1.8
36	5.1	5.1
37	2.5	---
38	2.5	---
39	0	0
40	0	5.1
41	0	0
42	0	0
43	---	---
44	---	---
45	5.1	1.9
46	5.1	5.1
47	1.9	1.9
48	0	0
49	0	1.9
50	2.6	2.6
51	5.1	5.1
52	2.5	2.5
53	2.6	2.6
54	0	0
55	0	0
56	---	---
57	4.8	0
58	5.2	0
59	0	0
60	0	0
61	---	---
62	0	0
63	0.4	0
64	0	0
65	1.0	1.0
66	0	0
67	2.5	2.5
68	2.5	2.5

MODE / PIN NO.	REC	PLAY
69	2.5	2.5
70	2.5	2.5
71	0	0
72	2.5	2.5
73	5.0	5.0
74	2.9	---
75	2.1	---
76	2.5	2.5
77	1.9	2.2
78	3.5	3.5
79	5.0	5.0
80	4.7	4.6
81	5.0	5.0
82	5.1	5.1
83	5.1	1.2
84	3.8	2.8
85	0	0
86	4.8	4.8
87	5.2	5.2
88	1.8	1.9
89	5.2	5.2
90	5.2	5.2
91	0	0
92	0	0
93	4.7	4.7
94	1.9	1.9
95	0	0
96	5.2	5.2
97	0	0
98	2.5	2.5
99	5.0	5.0
100	0.2	0
IC6002		
1	1.2	1.2
2	0	0
3	1.2	1.2
4	---	---
IC6003		
1	2.4	2.4
2	1.2	1.2
3	0	0
4	---	---
IC6301 (A)		
1	-18.0	-25.8
2	-25.9	-25.8
3	-26.0	-26.0
4	-22.4	-25.9
5	-25.9	-26.0
6	-25.9	-25.9
7	-25.9	-25.9
8	-0.2	-26.0
9	---	---
10	---	---
11	---	---

MODE / PIN NO.	REC	PLAY
12	---	---
13	---	---
14	---	---
15	5.1	5.1
16	0	0
17	---	---
18	---	---
19	---	---
20	---	---
21	---	---
22	2.4	2.5
23	---	---
24	0.2	0.2
25	0	0
26	5.0	5.0
27	---	---
28	---	---
29	---	---
30	---	---
31	---	---
32	---	---
33	-9.9	-13.8
34	-9.8	-17.7
35	-8.9	-8.9
36	-4.8	-8.9
37	-17.2	-8.9
38	-13.1	-8.8
39	5.2	5.2
40	-29.9	-29.9
41	-17.0	-17.0
42	-21.2	-21.2
43	-17.0	-17.0
44	-16.9	-25.4
IC6301 (B)		
1	0	0
2	0	0
3	0	0
4	0	0
5	---	---
6	---	---
7	---	---
8	5.0	5.0
9	0.5	0.5
10	0	0
11	---	---
12	---	---
13	---	---
14	---	---
15	---	---
16	3.3	0
17	0	0
18	---	---
19	0	5.1
20	---	---

MODE / PIN NO.	REC	PLAY
21	---	---
22	---	---
23	---	---
24	0	0
25	---	---
26	---	---
27	---	---
28	---	---
29	---	---
30	---	---
31	11.6	11.6
32	-8.4	-8.4
33	0	0
34	-8.4	0
35	0	0
36	0	0
37	0	0
38	0	0
39	0	0
40	-29.8	-29.9
41	-29.9	-29.9
42	-29.9	-29.9
43	-26.8	-26.8
44	-29.8	-29.9
45	-23.5	-23.7
46	0	0
47	-26.7	-26.9
48	-26.9	-26.9
49	-26.9	-26.9
50	-26.8	-26.9
51	-26.9	-26.9
52	0	0
53	0	-26.9
54	-26.9	-26.9
55	-26.9	0
56	-26.9	-26.9
57	5.2	5.2
58	-29.8	-29.8
59	0	0
60	0	0
61	0	0
62	0	0
63	0	0
64	0	0
Q1001		
E	0	0
C	165.1	165.1
B	0.3	0.3
Q1002		
E	0	0
C	0.3	0.3
B	0.6	0.6
Q1003		

MODE / PIN NO.	REC	PLAY
E	-0.6	-0.6
C	4.1	4.1
B	0	0
Q1004		
E	4.4	4.4
C	0.1	0.1
B	4.1	4.1
Q1005		
E	5.1	5.1
C	5.2	5.2
B	4.7	4.7
Q1051		
E	12.0	12.0
C	13.2	13.2
B	11.6	12.6
Q1052		
E	0	0
C	11.6	12.6
B	0.7	0.7
Q1053		
E	5.3	5.3
C	5.1	5.1
B	6.0	6.0
Q1070		
E	12.0	12.0
C	0	0
B	0	0
Q3001		
E	2.8	2.8
C	0	0
B	2.0	2.0
Q3875		
E	2.8	2.8
C	0	0
B	2.0	2.0
Q4001		
E	5.1	5.1
C	-18.7	5.1
B	5.1	4.4
Q4002		
E	-13.6	0
C	0	0
B	-19.1	0.8
Q4003		
E	-13.6	0
C	0	0
B	-18.6	0.8
Q4004		
E	0	0
C	2.5	2.5
B	0	0
Q4005		
E	0	0
C	0	0

MODE / PIN NO.	REC	PLAY
B	2.5	2.5
Q4006		
E	0	0
C	0	0
B	2.5	2.5
Q4007		
E	0	0
C	6.2	6.2
B	2.5	2.5
Q4101		
E	0	0
C	11.3	0.5
B	0.2	0.5
Q6001		
E	0	0
C	5.0	5.0
B	0	0
Q6002		
E	12.1	12.1
C	11.8	0.5
B	12.1	11.2
Q6003		
E	0.4	0
C	11.2	12.1
B	5.0	0
Q6005		
E	5.1	5.1
C	5.1	5.1
B	4.4	4.4
Q6006		
E	0	0
C	0	0
B	0.8	0.8
Q6007		
E	5.1	5.1
C	0	0
B	0	0
Q6009		
E	0	0
C	5.1	5.1
B	---	---
Q6010		
E	0	0
C	5.1	5.1
B	---	---
TP1001	0	0
TP1002	36.5	36.5
TP1003	13.5	13.5
TP1004	-30.0	-30.0
TP1005	5.1	5.1
TP1006	-18.9	-18.9
TP1007	-24.2	-24.2
TP1008	5.1	5.1

MODE / PIN NO.	REC	PLAY
TP1009	0	0
TP1050	5.3	5.3
TP1051	5.3	5.3
TP1058	12.0	12.0
TP3001	2.8	2.8
TP3002	2.7	2.3
TP3003	2.7	2.7
TP3004	4.3	4.3
TP3005	2.6	2.6
TP3006	2.5	2.5
TP3007	2.1	2.1
TP3008	3.4	3.4
TP3009	3.0	5.0
TP3010	5.1	5.1
TP3101	3.2	3.2
TP3102	3.0	0
TP3103	1.8	1.8
TP3150	3.9	3.1
TP3151	2.4	2.4
TP3401	3.1	3.8
TP3801	4.9	4.9
TP3802	4.9	4.9
TP3803	1.3	1.3
TP3804	2.6	2.6
TP3805	4.9	4.9
TP4002	0	0
TP4003	0	0
TP4011	0	0
TP4101	0	0
TP4102	0	0
TP4103	0	0
TP4201	0	0
TP4202	0	0
TP4203	0	0
TP4204	0	0
TP4205	0	1.8
TP4207	0	0
TP4208	0.4	0.4
TP6001	–	–
TP6002	5.2	5.2
TP6003	3.4	2.3
TP6004	4.7	4.6
TP6005	5.1	5.1
TP6007	0	0
TP6008	0	0
TP6009	5.2	5.2
TP6014	–	–
TP6016	3.5	3.5
TP6017	0	0
TP6018	5.2	5.2
TP6019	0	0
TP6201	2.2	2.2
TP6202	2.4	2.4
TP6203	2.5	2.5

MODE / PIN NO.	REC	PLAY
TP6204	1.0	1.0
TP6205	2.6	2.6
TP6206	2.9	–
TP6207	2.5	2.5
TP6208	2.6	2.6
TP6209	2.2	2.0
TP6210	1.9	2.2

Hi-Fi AUDIO/VIDEO
HEAD AMP CIRCUIT

MODE / PIN NO.	REC	PLAY
IC2601		
1	13.0	13.0
2	13.0	13.0
3	13.5	13.5
4	1.2	1.2
5	5.1	5.1
6	0.9	0.9
7	1.0	1.0
8	0.7	0.7
9	2.6	2.6
10	1.5	1.5
11	0	0
12	3.9	3.9
13	3.9	3.9
14	3.9	3.9
15	0.1	0.1
16	13.2	13.2
IC3501		
1	2.6	2.6
2	0	4.2
3	0.3	1.4
4	0	0.7
5	0	0
6	0	0.7
7	0.2	1.4
8	0	0
9	0	0
10	0.2	2.2
11	0	0
12	0	0
13	0	0
14	0.2	2.2
15	---	---
16	6.3	0
17	6.3	0
18	6.3	0
19	---	---
20	---	---
21	---	---
22	---	---
23	---	---
24	---	---
25	11.9	0.5
26	5.0	5.0
27	0	0
28	0	0
29	0	0
30	2.7	2.3
31	5.1	0.1
32	0.1	0.1
33	0	0
34	0.1	0.7
35	12.0	12.0
36	0.1	5.0

MODE / PIN NO.	REC	PLAY
IC4401		
1	0	2.6
2	4.0	0
3	0.6	0
4	0	0
5	0.6	0.7
6	4.0	0
7	1.0	1.0
8	0.7	0.7
9	2.6	2.6
10	5.1	5.1
11	0	0
12	0	0
13	3.9	3.9
14	3.9	3.9
15	0.1	0.1
16	13.0	13.0
TP3501	0	0
TP4402	4.0	0
TP4405	0	0
TP4406	2.6	2.6

CAPSTAN STATOR
CIRCUIT

MODE / PIN NO.	REC	PLAY
IC2501		
1	13.0	13.0
2	13.0	13.0
3	13.5	13.5
4	1.2	1.2
5	1.2	1.2
6	1.2	1.2
7	0.1	2.7
8	0	0
9	2.6	2.6
10	1.5	1.5
11	2.6	2.6
12	0.5	0.5
13	3.9	3.9
14	3.9	3.9
15	0	0
16	0	0
17	---	---
18	13.5	13.5
19	2.8	2.8
20	0	0.7
21	2.8	2.8
22	0	0.7
23	0.2	1.4
24	0	0
25	0	0
26	13.5	13.5
27	---	---
28	5.1	5.1

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

SYSTEM CONTROL/SERVO

MODE / PIN NO.	STOP	FF	REW
IC2501			
1	13.0	13.0	13.0
2	13.0	13.0	13.0
3	13.5	13.5	13.5
4	1.2	1.2	1.2
5	1.2	1.2	1.2
6	1.2	1.2	1.2
7	0.1	0.1	0.1
8	0	0	0
9	2.6	2.6	2.6
10	1.5	1.5	1.5
11	2.6	2.6	2.6
12	0.5	0.5	0.5
13	3.9	3.9	3.9
14	3.9	3.9	3.9
15	0	0	0
16	0	0	0
17	---	---	---
18	13.5	13.5	13.5
19	2.8	2.8	2.8
20	0	0	0
21	2.8	2.8	2.8
22	0	0	0
23	0.2	0.2	0.2
24	1.8	0	0
25	1.8	0	0
26	13.5	13.5	13.5
27	---	---	---
28	5.2	5.2	5.2
IC2601			
1	13.0	13.0	13.0
2	13.0	13.0	13.0
3	13.5	13.5	13.5
4	1.2	1.2	1.2
5	5.1	5.1	5.1
6	0.9	0.9	0.9
7	1.0	1.0	1.0
8	0.7	0.7	0.7
9	2.6	2.6	2.6
10	1.5	1.5	1.5
11	0	0	0
12	3.9	3.9	3.9
13	3.9	3.9	3.9
14	3.9	3.9	3.9
15	0.1	0.1	0.1
16	13.2	13.2	13.2
IC6001			
1	5.2	5.2	5.2
2	0	0	0
3	---	---	---
4	0	0	0
5	5.0	5.0	5.0
6	0	0	0
7	0	0	0

MODE / PIN NO.	STOP	FF	REW
8	0	0	0
9	5.0	5.0	5.0
10	0.5	5.0	5.0
11	0	0	0
12	5.2	5.2	5.2
13	0	0	0
14	4.9	4.9	4.9
15	5.2	5.2	5.2
16	20.5	0.5	0.5
17	5.2	5.2	5.2
18	5.2	5.2	5.2
19	---	---	---
20	4.9	4.9	4.9
21	2.5	0	0
22	4.9	2.2	2.2
23	2.6	2.6	2.6
24	0	0	0
25	0	5.0	5.0
26	2.5	2.5	2.5
27	0	0	0
28	0	0	0
29	4.7	4.7	4.7
30	0	0	0
31	0	0	0
32	0	0	0
33	2.6	2.0	2.0
34	4.5	2.0	2.0
35	---	---	---
36	5.1	5.1	5.1
37	2.5	2.5	2.5
38	2.5	2.5	2.5
39	0	0	0
40	---	---	---
41	---	---	---
42	0	0	0
43	---	---	---
44	---	---	---
45	---	---	---
46	2.0	1.0	1.0
47	1.9	1.9	1.9
48	0	0	0
49	1.9	1.9	1.9
50	2.6	2.6	2.6
51	5.1	5.1	5.1
52	2.5	2.5	2.5
53	2.6	2.6	2.6
54	5.2	5.2	5.2
55	5.2	5.2	5.2
56	---	---	---
57	---	---	---
58	4.9	4.9	4.9
59	5.0	5.0	5.0
60	1.9	1.9	1.9
61	0	0	0

MODE / PIN NO.	STOP	FF	REW
62	0.4	0.4	0.4
63	5.0	5.0	5.0
64	0	0	0
65	1.0	1.0	1.0
66	0	0	0
67	2.5	2.5	2.5
68	2.5	2.5	2.5
69	2.5	2.5	2.5
70	2.5	2.5	2.5
71	0	0	0
72	2.5	2.5	2.5
73	5.0	5.0	5.0
74	2.5	2.5	2.5
75	2.5	2.1	2.1
76	2.5	2.5	2.5
77	2.3	1.9	1.9
78	3.5	3.5	3.5
79	5.0	5.0	5.0
80	4.7	4.7	4.7
81	5.4	5.0	5.0
82	0	5.0	5.0
83	5.0	5.0	5.0
84	3.8	3.8	3.8
85	5.2	5.2	5.2
86	4.8	4.8	4.8
87	5.2	5.2	5.2
88	1.7	1.8	1.8
89	5.2	5.2	5.2
90	5.2	5.2	5.2
91	0	0	0
92	0	0	0
93	4.8	4.7	4.7
94	1.7	1.9	1.9
95	0	0	0
96	0	5.2	5.2
97	5.2	0	0
98	2.5	2.5	2.5
99	5.0	5.0	5.0
100	0.2	0.2	0.2
IC6002			
1	1.2	1.2	1.2
2	0	0	0
3	1.2	1.2	1.2
4	---	---	---
IC6003			
1	2.4	2.4	2.4
2	1.2	1.2	1.2
3	0	0	0
4	---	---	---
Q6001			
E	0	0	0
C	0	5.0	5.0
B	0	0	0

MODE / PIN NO.	STOP	FF	REW
Q6002			
E	12.5	12.1	12.1
C	0.5	1.0	1.0
B	12.1	12.1	12.1
Q6003			
E	0	0	0
C	12.1	12.1	12.1
B	0	0	0
Q6005			
E	5.1	5.1	5.1
C	5.1	5.1	5.1
B	4.4	4.4	4.4
Q6006			
E	0	0	0
C	0	0	0
B	0.8	0.8	0.8
Q6007			
E	5.1	5.1	5.1
C	0	0	0
B	0	0	0
Q6009			
E	0	0	0
C	5.1	5.1	5.1
B	---	---	---
Q6010			
E	0	0	0
C	5.1	5.1	5.1
B	---	---	---
TP6001	---	---	---
TP6002	0.1	5.2	5.2
TP6003	3.8	3.8	3.8
TP6004	5.1	5.1	5.1
TP6005	5.1	5.1	5.1
TP6007	0	0	0
TP6008	0	0	0
TP6009	5.2	5.2	5.2
TP6014	---	---	---
TP6016	3.5	3.5	3.5
TP6017	5.2	0	0
TP6018	0	5.2	5.2
TP6019	0	0	0
TP6201	2.6	2.0	2.0
TP6202	4.5	2.4	2.4
TP6203	2.5	2.5	2.5
TP6204	1.0	1.0	1.0
TP6205	2.6	2.6	2.6
TP6206	2.5	2.5	2.5
TP6207	2.5	2.5	2.5
TP6208	2.4	2.6	2.6
TP6209	4.9	2.2	2.2
TP6210	2.3	1.9	1.9

NOTE:
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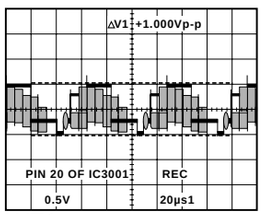
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

MAIN C.B.A.



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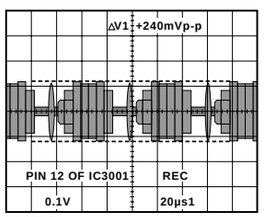

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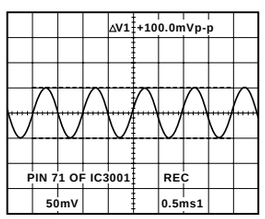

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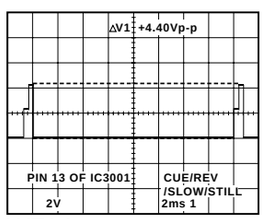

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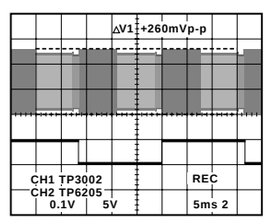
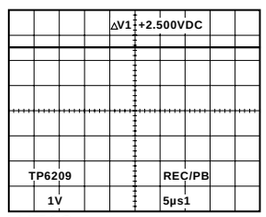


CH1 WF18
CH2 WF22



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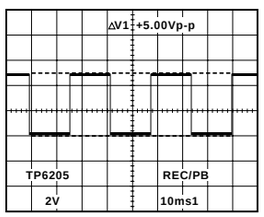

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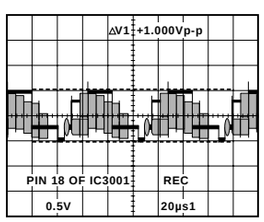

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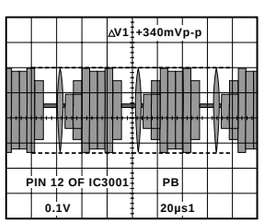

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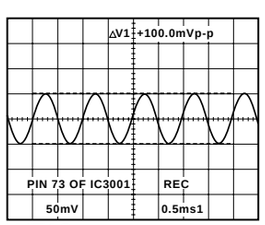

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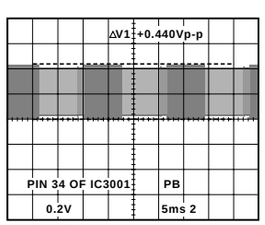

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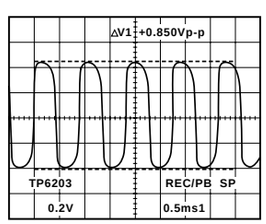

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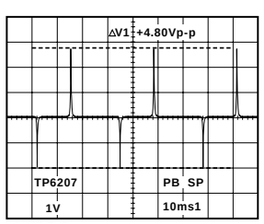

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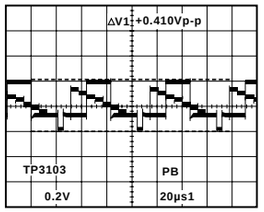

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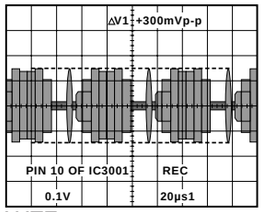

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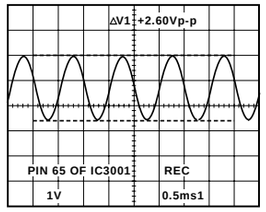

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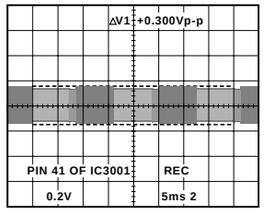

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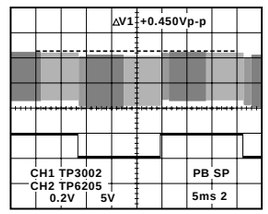
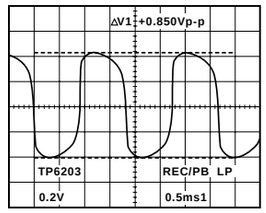


CH1 WF18
CH2 WF22



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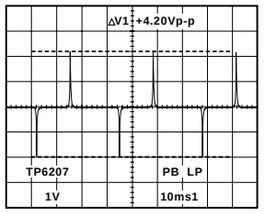

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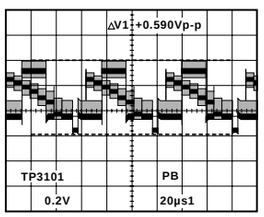

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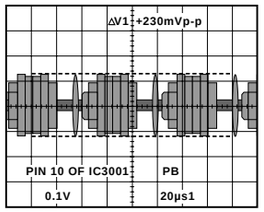

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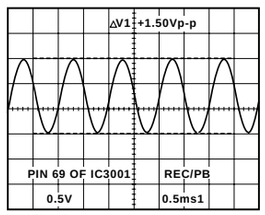

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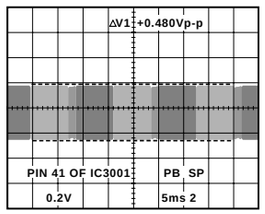

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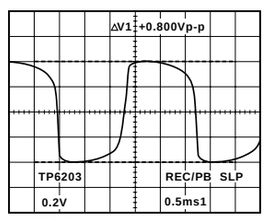

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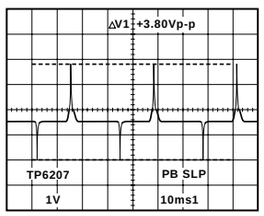

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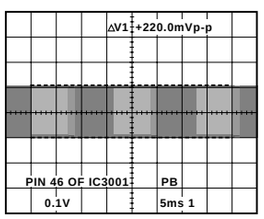

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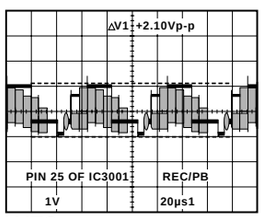

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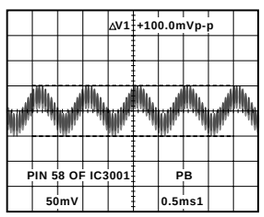

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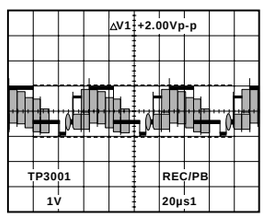

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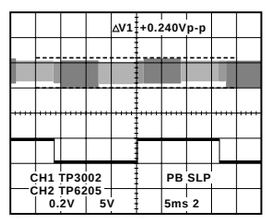
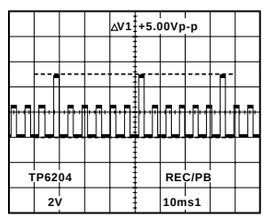


CH1 WF18
CH2 WF22



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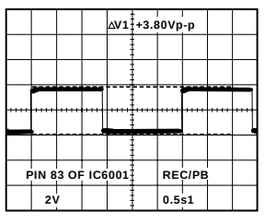


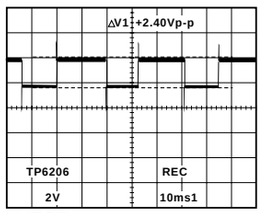
WF24

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

Hi-Fi AUDIO / VIDEO
HEAD AMP C.B.A.

COMPARISON CHART
OF MODELS & MARKS

MODEL	MARK
PV-9661	A
PV-9662	B



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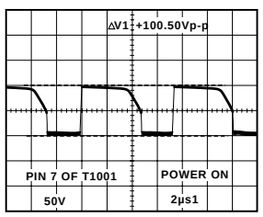

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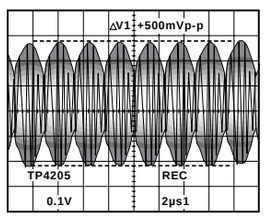

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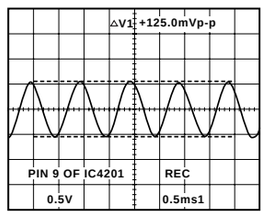

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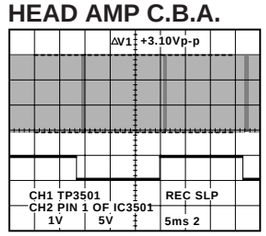

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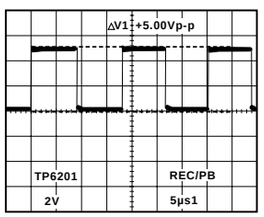

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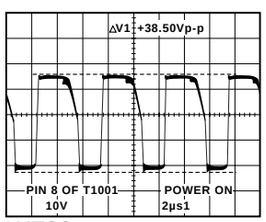

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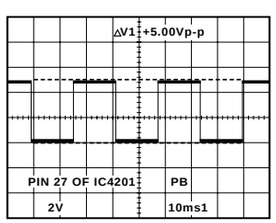

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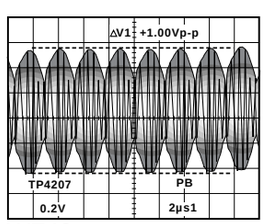

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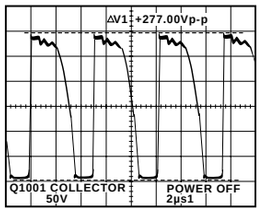

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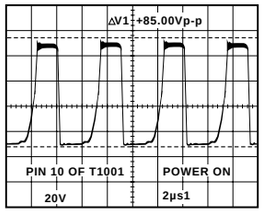

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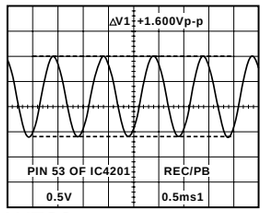

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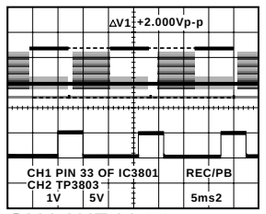
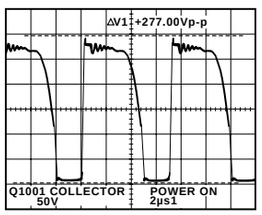


CH1 WF41(B)
CH2 WF42(B)



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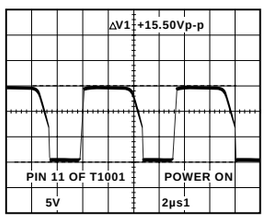

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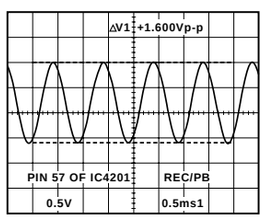

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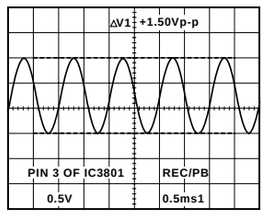

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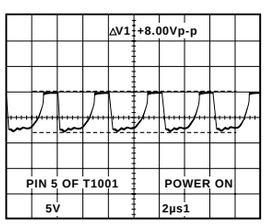

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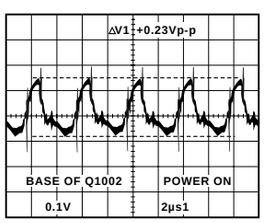

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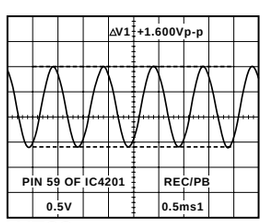


WF38

1 SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. **IMPORTANT SAFETY NOTICE**

   There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

2. An Isolation Transformer should always be used during the servicing of VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect VCR from being damaged by accidental shorting that may occur during servicing.
3. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
4. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
5. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1M ohm and 5.2M ohm. When the exposed metal does not have a return path to the chassis, the reading must be infinity.

Hot-Check Circuit

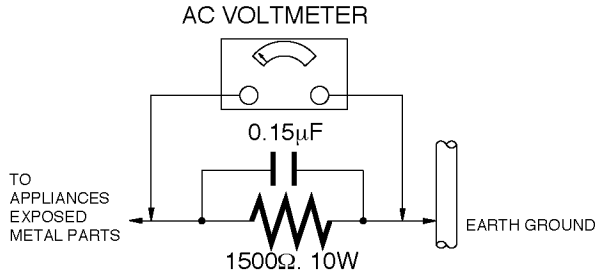


Figure 1

LEAKAGE CURRENT HOT CHECK

(See figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5K ohm, 10 watts resistor, in parallel with a 0.15 microfarad capacitor, between each exposed metallic part on the set and a good earth ground, as shown in figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks. Leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

2 PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits, some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should remove electrostatic charge for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

   CAUTION:Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

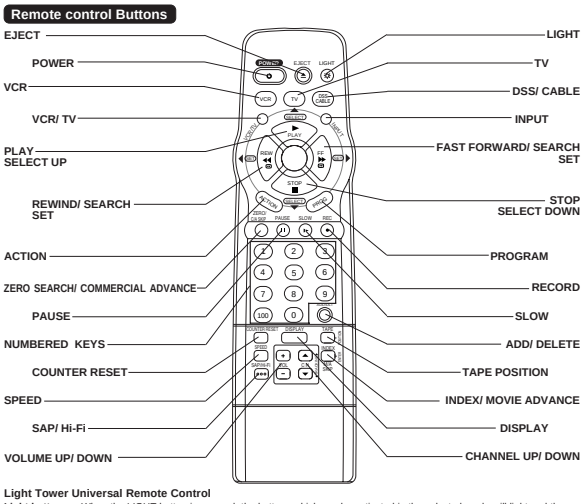
"NOTE to CATV system installer:

This reminder is provided to call the CATV system installer's attention to Article 820-22 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical."

3 OPERATION GUIDE

Location of Controls

Remote control Buttons

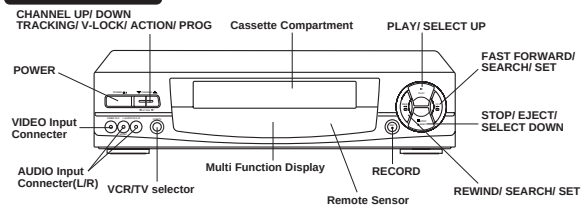


Light Tower Universal Remote Control

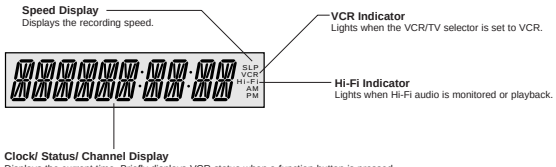
Light button: When the LIGHT button is pressed, the buttons which can be activated in the selected mode will light and the selected mode button (TV/VCR or CABLE/DSS) will flash for 5 seconds. If no buttons are pressed within 5 seconds, the light will turn off in order to conserve battery power. Also while holding down the buttons, the selected mode button will flash so you will be able to see, in the dark, which mode has been selected.

EJECT button: When EJECT is pressed, the tape is ejected from Cassette Compartment. If EJECT is pressed during recording, the VCR will not respond to the command.

Front View of the VCR



Multi Function Display

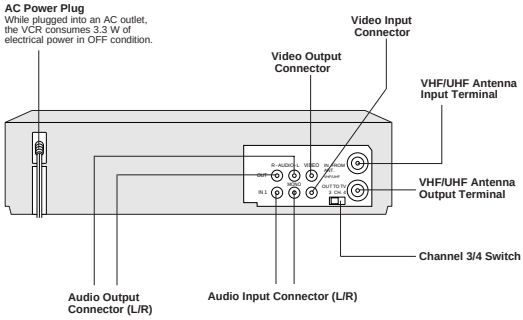

Speed Display
Displays the recording speed.
VCR Indicator
Lights when the VCR/TV selector is set to VCR.
Hi-Fi Indicator
Lights when Hi-Fi audio is monitored or playback.
Clock/ Status/ Channel Display
Displays the current time. Briefly displays VCR status when a function button is pressed.
Briefly displays the channel number, or "LINE1" or "LINE2" when a channel or line input is selected.
In demonstration mode, featured items are displayed. (See below.)

Self Demo Mode

After first power on or VCR memory reset (page40), Self Demo mode is started after 5 seconds.
This mode is cancelled when clock is set.
To restart, hold down PLAY on VCR for 5 seconds.
To cancel, hold down PLAY again for 5 seconds.

- This mode is only possible when cassette is not inserted and clock is not set.

Rear View of the VCR


AC Power Plug
While plugged into an AC outlet, the VCR consumes 3.3 W of electrical power in OFF condition.
Video Input Connector
Video Output Connector
VHF/UHF Antenna Input Terminal
VHF/UHF Antenna Output Terminal
Channel 3/4 Switch
Audio Output Connector (L/R)
Audio Input Connector (L/R)

One Time VCR Setup

When VCR is turned on the first time,

- Setup mode is entered automatically on the TV screen.
- Self Demo Mode is started automatically on Multi-Function Display. When you set the clock, it is canceled.

Process of Setup

Language ⇨ Channel ⇨ Clock

1 **Turn the TV and VCR on.**
Press POWER.

2 **Tune to VCR output channel.**
Tune TV to CH3 or CH4.
(Same as back of VCR)

- Always tune TV to this channel to monitor the VCR.
- If you used audio/video jack connection, tune the TV to its video input.

CH3 or CH4

3 **Select the language.**

SELECT LANGUAGE
PUSH VCR CH ▲: ENGLISH
OPRIMIR VCR CH ▼:ESPAÑOL
APP. VCR/TV : FRANÇAIS
(TV Screen)

for English
for Spanish (ESPAÑOL)
for French (FRANÇAIS)

- Use remote or VCR buttons.
- If wrong language is set, do "Reset All VCR Memory Functions"

4 **Select hookup.**
1) Press ▲▼ to select.
2) Press ▶ to set.

SELECT HOOKUP
CABLE/DSS BOX▶VCR▶TV
VCR▶CABLE/DSS BOX▶TV
VCR▶TV
SELECT:▲▼ KEY
SET :▶ KEY
END :ACTION KEY

- If you selected "CABLE/ DSS BOX ▶ VCR ▶ TV," continue with step 5. (Only the cable box output channel will be placed in memory.) If not, go to step 7.

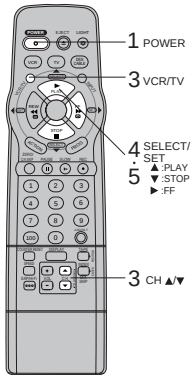
5 **Select cable box or DSS receiver output channel.**
1) Press ▲▼ to select.
2) Press ▶ to enter.

SELECT HOOKUP
CABLE/DSS BOX▶VCR▶TV
CABLE/DSS BOX OUTPUT CH
CH 03
SELECT:▲▼ KEY
SET :◀▶ KEY
END :ACTION KEY

- If necessary, refer to cable box manual.
- If you used Audio/ Video jack connection to cable box, set "VIDEO OUT".

6 **Turn on cable box and set it to PBS channel in your time zone.**

- If you use a DSS receiver, it must be turned off.



IMPORTANT NOTE FOR AUTO CLOCK SET

- Auto clock set is performed the first time the VCR is turned off each day. If used, a cable box must be left on and tuned to the PBS channel at the time VCR power is turned off if you want auto clock set to be done.
- If using, a DSS receiver must be turned off for auto clock set.
- If Cable Box or DSS receiver is connected to VCR via Audio/Video jacks, an RF coaxial cable must also be connected for auto clock set and channel auto set features.

7 **Start Channel Auto Set and Clock Auto Set.**

CHANNEL/CLOCK AUTO SET
CONNECT ANTENNA CABLE AND IF YOU USE A CABLE BOX, TUNE IT TO YOUR LOCAL PBS CH THEN. . .
PLEASE PUSH CH UP KEY

Press CH ▲.

CH AUTO SET PROCEEDING

AUTO CLOCK SET
PROCEEDING

Case 1 (Setup completed)

1/ 4/2000 TUE 12:00PM DST:ON
SETTING : CH 02
AUTO CLOCK SET
COMPLETED
END : PUSH CH UP KEY

Press CH ▲ to exit.

- If your area observes DST (daylight saving time), but the time is incorrect; do the "Time Zone Adjust" steps.

Case 2 (Setup incomplete)

AUTO CLOCK SET
IS INCOMPLETE
PUSH ACTION TO SET CLOCK

Clock Setup incomplete.
Set the clock manually.

1) Press ACTION.

SET CLOCK
1/ --/---- --:-- DST:ON
SELECT MONTH
SELECT:▲▼ KEY
SET :▶ KEY
END :ACTION KEY

2) Press ▲▼ to select month.
3) Press ▶ to set.

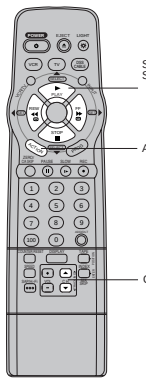
- Likewise, set date, year, time, DST (Daylight Saving Time).

To Make Corrections,
repeatedly press ◀▶ to move to error, then correct.

SET CLOCK
1/ 4/2000 TUE 12:00PM
DST:ON
SET COMPLETED
SET :◀▶ KEY
START :ACTION KEY

4) Press ACTION. (Clock starts.)

- To exit this mode, press ACTION again.



Notes

- VCR calendar is accurately maintained to Dec. 31, 2096 11:59PM.
- Channel auto set selects normal TV or Cable channels depending on your VCR hookup.

Using ▲▼◀▶ keys

You can also operate the menu screen using VCR buttons.
If you use VCR buttons, press CH ▲ and CH ▼ together to display the menu screen.

When menu screens are displayed, PLAY, STOP, REWIND, and FF buttons function as ▲▼◀▶ only.

▲: PLAY ◀: REW
▼: STOP ▶: FF

On Remote On VCR

Timer Recording Using VCR Plus+ System

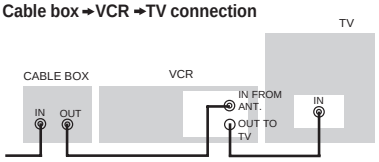
VCR Plus+ System is ...
a feature that allows you to set **most items** of a timer recording by simply entering a special code number (PlusCode programming number) found in TV GUIDE and selected newspaper TV listings.

Process of Recording
Connection ⇨ Setup ⇨ Programming

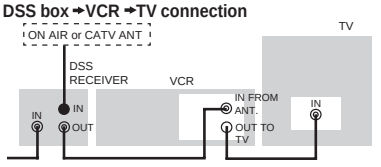
Choose your connection type from the following diagrams

A

Cable box ➡VCR ➡TV connection



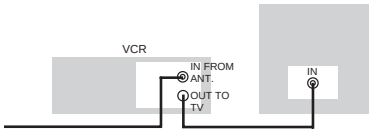
DSS box ➡VCR ➡TV connection



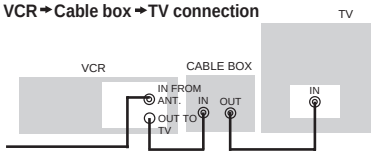
→ Set up

B

VCR ➡TV connection



VCR ➡Cable box ➡TV connection



→ Set up

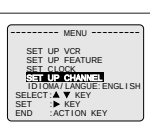
→ Programming

Cable Box Setup

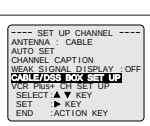
Process of Recording
Connection ⇨ Setup ⇨ Programming

1 **Display menu.**
Press ACTION.*

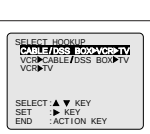
2 **Select SET UP CHANNEL.**
1) Press ▲▼ to select.
2) Press ▶ to display.



3 **Select CABLE/DSS BOX SET UP.**
1) Press ▲▼ to select.
2) Press ▶ to display.

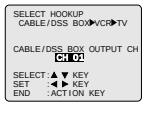


4 **Select your hookup method.**
1) Press ▲▼ to select.
2) Press ▶ to set.



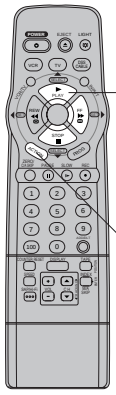
- If CABLE/DSSBOX ▶VCR ▶TV, go to step 5.
  If other, press ACTION three times.

5 **Select cable box or DSS receiver output channel.**
1) Press ▲▼ to select.
2) Press ▶ to enter.



- If necessary, refer to your Cable Box/DSS manual.
- If you are using Audio/Video jack connections, select and set "VIDEO OUT" as output channel.

6 **End setup.**
Press ACTION twice.



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Timer Recording Using VCR Plus+ System (continued)

Auto VCR Plus+ System Channel Setup (Part 1)

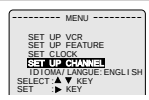
In order for VCR to read VCR Plus+ code, some set up is required. Guide (VCR Plus+) channel number is assigned to each local broadcast and cable station. Because this number sometimes differs from channel TV receives station on, it is necessary to problem VCR with local channel information. To receive VCR Plus+ channels automatically, perform the steps below. Or, see "Manual VCR Plus+ System Channel Setup" section.

Process of Recording
Connection ⇨ Setup ⇨ Programming

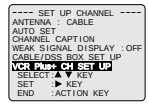
Important Note
- **"One Time VCR Setup" must be completed before "Auto VCR Plus+ System Channel Setup" can be done. If any parts of setup is incomplete, a warning screen appears.**
- **If your VCR connection type changes from type A to B, repeat steps 1~4 and select VCR ▶CABLE/DSS▶ TV before proceeding with these steps.**

1 **Display menu.**
Press ACTION.*

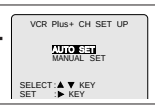
2 **Display SET UP CHANNEL.**
1) Press ▲▼ to select.
2) Press ▶ to display.



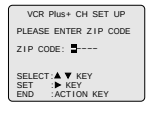
3 **Display VCR Plus+ CH SET UP.**
1) Press ▲▼ to select.
2) Press ▶ to display.



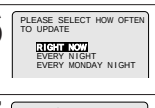
4 **Select AUTO SET.**
1) Press ▲▼ to select.
2) Press ▶ to set.



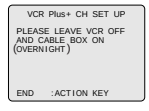
5 **Enter Zip Code.**
1) Press ▲▼◀▶ to select and enter each number.
2) Press ▶ or ACTION to set.



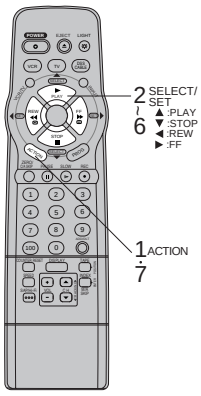
6 **Select When to Update.**
1) Press ▲▼ to select.
2) Press ▶ to set.



7 **End setup.**
Press ACTION twice.



- Make sure to leave VCR off overnight. If controllable, leave your cable box on.



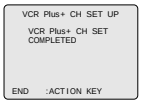
Notes
- Make each entry within 5 minutes or VCR will leave this mode.
- Once local channels have been programmed, they will stay in memory, even in the case of a power failure.
- "SET" indicator will flash during Auto VCR Plus+ System Setup.
- If the start time for a timer recording comes up during Auto VCR Plus+ System Setup, the timer recording will have priority.

Auto VCR Plus+ System Channel Setup (Part 2)

Before you perform the following steps, you should have:
- **completed "Auto VCR Plus+ System Channel Setup (Part 1)".**
- **left VCR on overnight, and turned it back on after 7:00 AM the next day.**

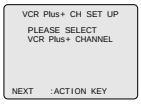
Process of Recording
Connection ⇨ Setup ⇨ Programming

1 If channel updating was successful...



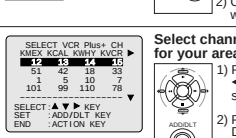
Exit this mode.
Press ACTION.

If VCR could not distinguish channel map...

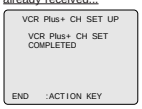


Display SELECT VCR Plus+ CH.
1) Press ACTION to display.
2) Continue with step 2.

2 **Select channel map for your area.**
1) Press ▲▼ ◀▶ to select.
2) Press ADD/ DLT to set.

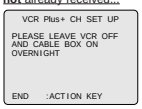


3 If selected channel map is already received...



Exit this mode.
Press ACTION.

If selected channel map is **not** already received...

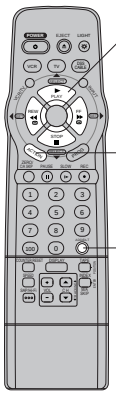


End Setup.
Press ACTION. (Channel map will be updated overnight)

- Make sure to leave VCR off overnight. If controllable, leave your cable box on.

Repeat these steps as necessary.

If Auto Setup fails, do "Manual VCR Plus+ System Channel Setup".



To Change or Update Auto VCR Plus+ System Channel Setup

(E.g. you selected wrong channel map or zip code.)

a Do "Auto VCR Plus+ System Channel Setup (Part 1)" steps 1~4.

b Press ▲▼ to select UPDATE VCR Plus+ or SELECT VCR Plus+ CH, then press ▶.

c If you selected UPDATE VCR Plus+ CH, perform steps 5~7 in the "Auto VCR Plus+ System Channel Setup (Part 1)" section.

If you selected SELECT VCR Plus+ CH, perform steps 2~3 in the "Auto VCR Plus+ System Channel Setup (Part 2)" section on this page.

Timer Recording Using VCR Plus+ System (continued)

Manual VCR Plus+ System Channel Setup

- **Before you begin, complete "Channel Setup Preparations" below right.**

Important Note

- **If your VCR connection type changes from type A to B on page 14, repeat steps 1~4 of page 15 and select VCR► CABLE/DSS► TV before proceeding with these steps.**

1 **Do "Auto VCR Plus+ System Channel Setup (Part 1)," steps 1~3 on page 16.**

2

```
-- VCR Plus+ CH SET UP --

     AUTO SET
   MANUAL SET

SELECT:▲▼ KEY
SET   :▶ KEY
END   :ACTION KEY
```

Select MANUAL SET.

1) Press ▲▼ to select.
2) Press ▶ to set.

IMPORTANT NOTE:
For step 3, use the list you prepared. You may leave lines blank if you do not receive that station, or if the GUIDE CH number and the CABLE (or TV) CH numbers are the same.

3

```
VCR Plus+ CH SET UP

GUIDE CH    CABLE CH
▶ 01           --
  02           --

SELECT:▲▼ KEY
SET   :▶ KEY
END   :ACTION KEY
```

Select VCR Plus+ channels.

1) Press ▶ to move cursor to right column.
2) Press ▲▼ to change CABLE CH number.
3) Press ◀ to set.
4) Press ▲▼ to scroll up/down GUIDE CH column.

- Repeat step 3 until list is complete.

```
VCR Plus+ CH SET UP

GUIDE CH    CABLE CH
▶ 01           --
  02           --

SELECT:▲▼ KEY
SET   :◀ KEY
END   :ACTION KEY
```

To make corrections,
Press ▲▼ and ▶ to move to error, then ▲▼ to change, or ADD/DLT* to erase number.

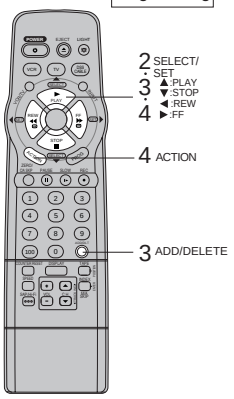
4 **End setup.**
Press ACTION three times.

Notes

- Make each entry within 5 minutes or the VCR will leave this mode.
- Once local channels have been programmed, they will stay in memory, even in the case of a power failure.

Process of Recording

Connection ⇨ Setup ⇨ Programming



Channel Setup Preparations

In order to complete step 3 left, make a local channel list (see example below).

You will need the following:

- A line up of normal TV and/ or Cable stations and the channel number you receive them on.
- A list of Guide (VCR Plus+) channel numbers for the stations you receive found in TV Guide and selected newspapers.

1 Make a 3-column chart. In the left column, write the name of all the stations you receive.
2 In the middle column, write each station's Guide (VCR Plus+) number from TV Guide.
3 In the right column, write the channel number your TV receives the station on.

EXAMPLE ONLY

Broadcast or Cable Station Name	Assigned Guide (VCR Plus+) channel no.	Channel no. your TV receives the station on
HBO	33	15
Nickelodeon	38	20
CBS	04	04
FOX	11	

Check list before you begin.

- ☐ The clock is set.
- ☐ VCR Plus+ System Setup is complete.

Process of Recording

Connection ⇨ Setup ⇨ Programming

1 **Display SET PROGRAM.**
Press PROG.

2

```
----- SET PROGRAM -----

  VCR Plus+ PROGRAM
    TIMER PROGRAM

SELECT:▲▼ KEY
SET   :▶ KEY
END   :PROG KEY
```

Display VCR Plus+ screen.

1) Press ▲▼ to select.
2) Press ▶ to display.

3

```
VCR Plus+

ENTER PLUSCODE NUMBER
  --
  --

USING 0~9 KEYS
```

Enter PlusCode programming number.

1) Press Numbered keys.
2) Press PROG to lock in the program.

To make corrections,
press ◀ (repeatedly to delete the PlusCode programming number.

```
VCR Plus+

1 ONE TIME
2 DAILY(MON~FRI)
3 WEEKLY

TO SELECT PUSH 1,2 OR 3
```

Enter record frequency.

3) Press 1, 2, or 3 key to select program type.

4

```
DATE   START   STOP    CH
1 SAT 10:00P 12:00P 125
TODAY          \ /     ABC
CATEGORY: N/A          SP
SELECT CATEGORY
SELECT:▲▼ KEY
SET   :◀ ▶ KEY
END   :PROG/ACTION KEY
```

Select Category.**

1) Press ▲▼ to change.
2) Press ▶ set.

Change record speed.
Repeat 1) and 2).

5 **Make notes. -----> Do step 4.**

- If not wanted, go to step 6.

6

```
P DT START   STOP   CH SPD
1 DAY  5:00A 12:00A 08  SP
2 1 10:00P 12:00P 125  SP
3 -- --:-- --:--  --  --
4 -- --:-- --:--  --  --

CANCEL:ADD/DLT KEY
SELECT:1-8/▲▼ KEY
ENTER :▶ KEY
END   :PROG/ACTION KEY
```

End programming.

1) Press PROG (or ACTION).

To cancel,
press ADD/DLT.

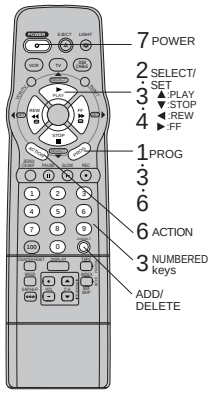
2) Press PROG (or ACTION) again to exit.

7 **Set timer.**

Press POWER OFF.

TIMER

Multi Function Display



** Category Items
N/A(not applicable), SPORTS, MOVIE, COMEDY, MUSIC, DRAMA

Use normal Timer Recording steps if:

- the PlusCode programming number for a program is not listed.
- you anticipate the program, such as a sporting event, to run over the scheduled stop time.

See page to:

- cancel a timer recording in progress.
- replace program contents.
- review or clear program contents once set.

Important notes for DSS/Cable Box users

- When recording via DSS, the receiver, must be left on.
- When recording via cable or antenna, DSS receiver must be off.

Notes

- Avoid overlapping program times.
- VCR PlusCode programming numbers can not be used to program the VCR to record DSS channels.
- You can obtain unlisted PlusCode numbers by calling 1 - 900 - 454 - 7587. Call costs approximately $.95 per minute.

Tape Operation

COMMERCIAL▸▸ADVANCE®

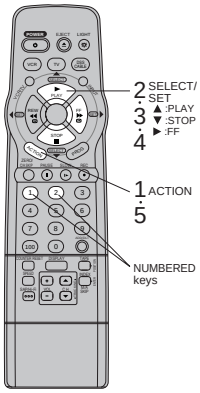
COMMERCIAL▸▸ADVANCE® detects and marks the beginning and end points of commercials on your tape for recordings over 15 minutes in length. When COMMERCIAL▸▸ADVANCE® marked tape is played back, the VCR automatically advances through the commercial segments at high speed. You can also set this feature to Manual so as to have more control over the advance process. The effectiveness of this system can vary due to differences in the way television stations broadcast. See page for answers to the most commonly asked questions about this feature.

COMMERCIAL▸▸ADVANCE® Marking

When C/A RECORD: ON, VCR automatically rewinds the tape after a recording has been made and marks the beginning and end of any detected commercial blocks. After marking is done, the tape is returned to the end of recording. Commercials are not erased from the tape.

Check list before you begin.

- ☐ All connections are made.
- ☐ One time Setup completed.
- ☐ VCR is plugged in.
- ☐ TV is turned on and set to the VCR channel (CH 3 or 4).



1 **Display menu.**
Press ACTION.*

2

```
--------- MENU ---------

  SET UP VCR
  SET UP FEATURE
  SET CLOCK
  SET UP CHANNEL
  IDIOMA/LANGUE:ENGLISH
SELECT:▲▼ KEY
SET   :▶ KEY
END   :ACTION KEY
```

Display SET UP FEATURE.

1) Press ▲▼ to select.
2) Press ▶ to display.

3

```
---- SET UP FEATURE ----

  TIMER PROGRAM
  SET UP COMMERCIAL ADV.

SELECT:▲▼ KEY
SET   :▶ KEY
END   :ACTION KEY
```

Display SET UP COMMERCIAL ADV.

1) Press ▲▼ to select.
2) Press ▶ to display.

4

```
SET UP COMMERCIAL ADV.

  C/A RECORD     : ON
  C/A PLAYBACK   : AUTO

SELECT:▲▼ KEY
SET   :▶ KEY
END   :ACTION KEY
```

Set ON or OFF.

1) Press ▲▼ to select.
2) Press ▶ to set.

Note

- When using the timer to record two adjacent shows on the same channel, better accuracy can be obtained by programming each shows separately.

ON Timer, VCR Plus+ System, and One Touch recordings are marked automatically.

```
THE VCR IS WAITING TO
MARK COMMERCIALS IN THE
PROGRAM YOU RECORDED.


MARKING
NOW    : PUSH 1 KEY
LATER  : PUSH 2 KEY
CANCEL : PUSH ACTION KEY
```

When STOP is pressed during normal recording, Select One of a) or b) or c).

a) Press 1 key to mark the recording now.
"NOW MARKING COMMERCIALS" appears.
b) Press 2 key to mark the recording later (after the power has been turned off).

- If the tape is rewound and another recording started before the power is turned off, commercials may not be marked correctly.

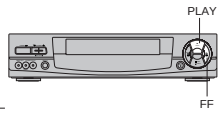
c) Press ACTION to cancel the marking of this recording.

OFF The VCR will not mark commercials.
When you are editing or dubbing a tape, or when you do not wish to use this feature, off should be selected.

5 **Return to normal screen.**
Press ACTION three times.

COMMERCIAL▸▸ADVANCE® Playback

When playing back recording which have been marked using COMMERCIAL▸▸ADVANCE® feature, you can either set VCR to automatically advance through marked commercial blocks, or set it so that commercials are only skipped on your command.



1 **Display menu.**
Press ACTION.*

2

```
--------- MENU ---------

  SET UP VCR
  SET UP FEATURE
  SET CLOCK
  SET UP CHANNEL
  IDIOMA/LANGUE:ENGLISH
SELECT:▲▼ KEY
SET   :▶ KEY
END   :ACTION KEY
```

Display SET UP FEATURE.

1) Press ▲▼ to select.
2) Press ▶ to set.

3

```
---- SET UP FEATURE ----

  TIMER PROGRAM
  SET UP COMMERCIAL ADV.

SELECT:▲▼ KEY
SET   :▶ KEY
END   :ACTION KEY
```

Display SET UP COMMERCIAL ADV.

1) Press ▲▼ to select.
2) Press ▶ to set.

4

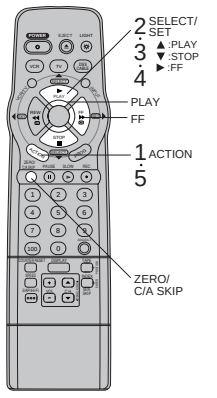
```
SET UP COMMERCIAL ADV.

  C/A RECORD     : ON
  C/A PLAYBACK   : AUTO

SELECT:▲▼ KEY
SET   :▶ KEY
END   :ACTION KEY
```

Set AUTO or MANUAL.

1) Press ▲▼ to select.
2) Press ▶ to set.

AUTO VCR will automatically advance through marked commercial blocks recorded on the tape and then resume playback.

MANUAL VCR will advance through commercials only when ZERO/ C/A SKIP is pressed. Playback will resume when the end mark of a commercial block is found, or a new recording or blank portion is detected, or after 8 minutes.



5 **Return to normal screen.**
Press ACTION three times.

Notes

- The selection mode in step 4 remains set unless there is a power outage in which case the original factory setting will be restored.
- If playback is started in the middle of a commercial, only a single commercial is shown, or an individual commercial is longer than 1 minute, a commercial may not be skipped. Press FF to quickly advance through the commercial.
- Part of a recorded program may be skipped over if the program portion between commercials is less than one minute or there are frequent dark and quiet scenes during the program. To view the portion of tape being incorrectly skipped, press PLAY while the VCR is skipping, reverse the tape to a point just prior to where the skipping began and press PLAY again. This time the group will not be automatically skipped. Automatic skipping will be re-enabled when the end of the marked group is detected.

COMMERCIAL▸▸ADVANCE® is a trademark of SRT, Inc.
A Jerry Iggulden invention licensed in association with Arthur D. Little Enterprises, Inc.
U.S.Pat. No. 5,333,091
other patents pending

Tape Operation (continued)

The most commonly asked questions about COMMERCIAL ADVANCE™ are answered below.

Question	Answer
How fast does the VCR advance through commercials?	The VCR advances through a 3-minute commercial block in about 8 to 12 seconds if the tape speed is SLP. In SP, it takes about 25 to 35 seconds.
Are commercials advanced through only when I playback a recording?	Yes. The commercials are not marked until after the recording is finished.
Are commercials still recorded on the tape in case I choose to view them sometime?	Yes. By setting the C/A PLAYBACK to MANUAL, see page 23, you can view or advance through commercials as desired.
Does COMMERCIAL ADVANCE™ work in all recording speeds?	Yes. COMMERCIAL ADVANCE™ works in SP, LP, and SLP.
Does the VCR advance through commercials each time I playback tapes which were recorded using COMMERCIAL ADVANCE™?	Yes. As long as C/A PLAYBACK is set to AUTO, the VCR should advance through commercials each time the tape is played back.
After marking commercials, does the VCR stop at the end of the tape, or rewind to the beginning?	The tape stops at the end of the recording so that any additional timer recordings can be performed.
Can I play my COMMERCIAL ADVANCE™ recordings in non-COMMERCIAL ADVANCE™ VCRs?	Yes. COMMERCIAL ADVANCE™ marked recordings will play in non-COMMERCIAL ADVANCE™ VCRs, but commercials will not be advanced through.
Does the marking process interfere with other programmed recordings?	No. If the interval between 2 or more timer programs is not sufficient to mark the recording, marking will be done after all recordings are complete and the power goes off.
What happens if I cancel the marking in progress so I can use the VCR?	Marking will be resumed when the VCR's power is turned off as long as the tape has not been ejected.
What if part of my program is advanced through along with the commercials?	Please see the 3rd note.

Additional Notes:

- Because of the various ways in which commercials are broadcast, the VCR may not be able to recognize all commercials.
- If a timer recording is scheduled for the middle of the night, please be aware that the VCR will make some noise as it rewinds and fast forwards the tape while marking commercials.

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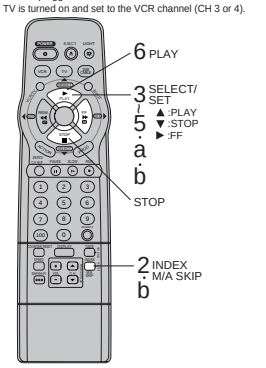
U.S.Pat. No. 5,333,091
other patents pending

MOVIE ADVANCE™

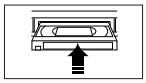
MOVIE ADVANCE™ helps you locate certain parts of prerecorded movies (rented or purchased).
The feature works in two ways.
- You can go to the beginning of the movie.
- You can skip from one preview to the next.

MOVIE ADVANCE™ works only on cassette recorded in SP speed with the record tab removed.

Check list before you begin.
- ☐ All connections are made.
- ☐ One time Setup completed.
- ☐ VCR is plugged in.
- ☐ TV is turned on and set to the VCR channel (CH 3 or 4).

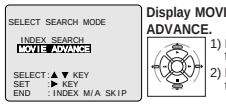


1 Insert a cassette without record tab.



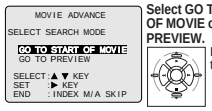
2 Display "SELECT SEARCH MODE."
1) Press INDEX/ M/A SKIP.*
- If you inserted a cassette with the record tab or if you selected "INDEX/ SEARCH" .

3 Display MOVIE ADVANCE.



1) Press ▲▼ to select.
2) Press ▶ to set.

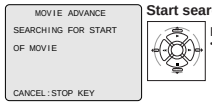
4 Select GO TO START OF MOVIE or GO TO PREVIEW.



Press ▲▼ to select.

Select "GO TO START OF MOVIE," if you want to advance directly to beginning of the movie.
--> continue with step 5.
Select "GO TO PREVIEW," if you want to view the first (next) preview.
--> go to "To Search for Preview" at right.

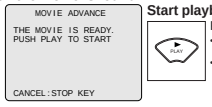
5 Start searching.



Press ▶ .
- To cancel, press STOP.

When the movie is found...

6 Start playback.



Press PLAY.
- To cancel, press STOP.
- The display will time out after 3 minutes and the VCR will enter the Stop mode..

To Search for Preview.

You can override the operation of MOVIE ADVANCE™ SEARCH FOR PREVIEWS mode by pressing MA SKIP during tape searching. MOVIE ADVANCE™ works by searching the tape past each preview and then reversing back to the start of the detected preview. While the tape is reversing back, if INDEX/ M/A SKIP is pressed, MOVIE ADVANCE™ will begin searching for the next preview. While searching for the next preview, if you see the start of a preview which you wish to watch, press MA SKIP and MOVIE ADVANCE™ will immediately reverse back to the start of that preview, instead of searching further past the preview start point. Once the VCR is playing a preview, press MA SKIP to advance to the next preview, long commercial or the start of the movie (whichever is next).

a Start preview searching.
1) In step 4 at left, select Go To PREVIEW.
2) Press ▶.
- If you want to playback, press PLAY.

When a preview is detected, VCR will start playback.

b Start next preview searching.
1) Press INDEX/ M/A SKIP.
- To cancel, press STOP.

Tape Operation (continued)

VHS Index Search System

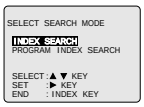
Each time recording is made, an invisible index mark is placed on the tape. When timer recordings are made, program index and information are also included. These index marks can be used to access or scan recordings.

Direct Access (For normal and /or timer recordings)

Go directly to desired recording.

1 Display SELECT SEARCH MODE.
Press INDEX/ M/A SKIP.*
- If there are no timer recordings on the Program Index List, go to step 3.

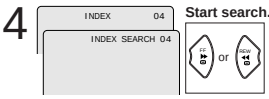
2 Display INDEX.



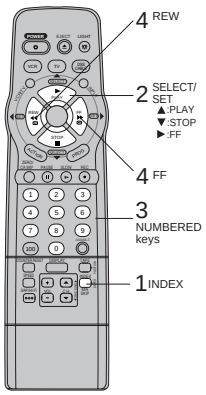
1) Press ▲▼ to select.
2) Press ▶ to display.
- This screen appears only if there are timer recordings.

3 Select the recording number.
Press NUMBERED keys.
- To calculate number, see below.

4 Start search.

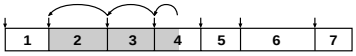


Press FF or REW.
- When search is finished, playback begins.

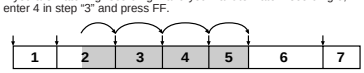


■ To Calculate Index Number

Example 1:
If you are watching recording 4 and you want to watch recording 2, enter 3 in step "3" and press REW.



Example 2:
If you are watching recording 2 and you want to watch recording 6, enter 4 in step "3" and press FF.



NOTE: ↓ indicates start points of each recording.

Notes
- Make each entry within 10 seconds, or the Index Search mode will be canceled.
- If Direct Access or Index Scan is started very close to an index mark, that index mark may not be counted in the search.

Program Index Search (For timer recordings only)

Choose a timer recorded program from a Program Index List. **When the tape is ejected or normal recording is started, all program index data is deleted.**

1 Display SELECT SEARCH MODE.
Press INDEX/ M/A SKIP.

2 Display PROGRAM INDEX.

1) Press ▲▼ to select.
2) Press ▶ to display.

3 Select the desired recorded program.

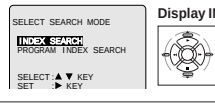
1) Press ▲▼ to select.
2) Press ▶ to start the forward or rewind search.
- When search is finished, playback begins.

Index Scan (For normal and /or timer recordings)

In Play mode, the first 10 seconds of each recording can be scanned (forward or reverse).

a Display SELECT SEARCH MODE.
Press INDEX/ M/A SKIP.
- If there are no timer recordings on the Program Index List, go to step c.

b Display INDEX.



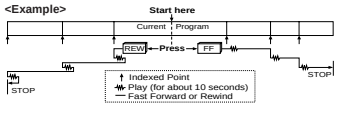
1) Press ▲▼ to select.
2) Press ▶ to display.

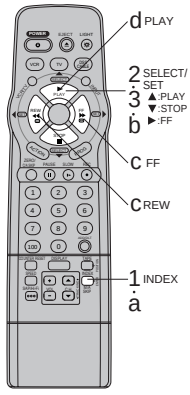
c Start scan.

Press FF or REW.

d Cancel scan, start playback.

Press PLAY.
- To stop, press STOP.





Auto Operation Functions

■ Auto Playback
Tape insert --> Power turn on --> --> Start playback if record tab (see page 36.) is removed.

■ Auto Rewind
Playback / Manual Record / Fast Forward --> Tape end --> -->Rewind (Auto)

■ Playback Auto Eject (Repeat Play is "OFF")
Playback --> Rewind --> -->Tape eject (Without record tab)

■ Memory Rewind Off
Rewind --> Press POWER --> -->Turn off after complete

Tape Operation (continued)

Repeat Play

Set to see a recording over and over.

1 **Display menu.**
Press ACTION.*

2 **Display SET UP VCR.**
1) Press ▲▼ to select.
2) Press ▶ to display.

```
--------- MENU ---------
  SET UP VCR
  SET UP FEATURE
  SET CLOCK
  SET UP CHANNEL
  IDIOMA/LANGUE: ENGLISH
SELECT:▲▼ KEY
SET    :▶ KEY
```

3 **Set ON or OFF.**
1) Press ▲▼ to select "REPEAT PLAY."
2) Press ▶ to set.

```
------ SET UP VCR ------
REPEAT PLAY      : OFF
TIME STAMP       : ON
REMOTE WARNING   : ON
AUTO SHUT-OFF    : ON
SELECT:▲▼ KEY
SET    :▶ KEY
END    :ACTION KEY
```

- Playback repeats when tape end is reached or unrecorded portion over 30 seconds is detected.

4 **Return to normal screen.**
Press ACTION twice.

Zero Search

To quickly return to specific tape counter location.

a **Display Counter.**
Press DISPLAY during playback.

b **Reset to "0:00:00."**
Press COUNTER RESET at the desired position.

```
PLAY   12:00AM
              0:00:00
                  SP
```

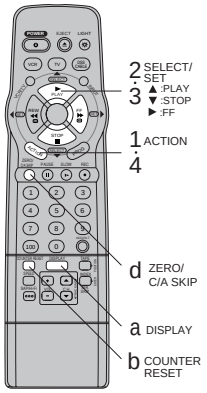
c **Continue playback, rewind, or fast forward.**

d **Return to "0:00:00."**
Press ZERO/ C/A SKIP in Stop mode.

```
STOP   12:00AM   ABC
              0:00:30
                  SP
```

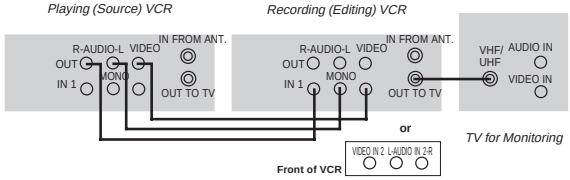
- The VCR will go into FF or REW mode and stop at the last point the Counter was set to 0:00:00.

***Important:**
If the remote control POWER, ACTION, PROG, CH ▲/▼, INDEX/ M/A SKIP, NUMBERED keys, INPUT, TAPE POSITION, or ADD/ DLT button does not work when pressed, press the VCR button on the remote and try the button again.



Copying Your Tapes (Dubbing)

Connections you'll need to make. (Choose front or rear connection.)



	Playing (Source) VCR	Recording (Editing) VCR
1	**Insert pre-recorded tape.**	**Insert blank tape with record tab.**
2		**Select LINE mode.** Press INPUT. (See "Selecting the Input Mode" below.)
3	**Put in Standby mode.** Press PLAY, then PAUSE at starting point.	**Put in Standby mode.** Press REC, then PAUSE immediately.
4	**Start dubbing.** Press PAUSE.	**Start dubbing.** Press PAUSE.
5	**Stop dubbing.** Press STOP.	**Stop dubbing.** Press STOP.

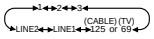
■ To Monitor Dubbing on Your TV

1 Turn your TV on and tune to the Recording VCR channel (CH3 or CH4).
2 Set the VCR/ TV Selector on the Recording VCR to "VCR."

Note Dubbing tapes protected with Copy Guard will have poor quality results.

■ Selecting the Input Mode

Method 1: Press INPUT.
Channel Number <--> LINE1 <--> LINE2
Method 2: Press CH ▲/▼. Display will change as below.



- "LINE1" or "LINE2" displays on Multi-Function Display (about 4 sec.) when LINE1 or LINE2 is selected.
- LINE1: For rear audio/video connection.
  LINE2: For front audio/video connection.

Caution: **Unauthorized exchanging and/or copying of copyrighted recordings may be copyright infringement.**

Special VCR Features

Tape Position Display Feature

To find out the present tape position.
Tape position cannot be found for C-Cassette type and tape of less than 60 minutes.

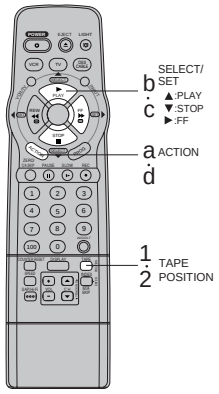
Check list before you begin.
- ☐ All connections are made.
- ☐ VCR is plugged in.
- ☐ TV is turned on and set to the VCR channel (CH 3 or 4).

1 **Detect Tape Position.**
Press TAPE POSITION.*

```
DETECTING TAPE POSITION
BEGIN          END
```

- Detecting tape position is only displayed when cassette is first inserted.
- It takes several seconds for correct indication to appear.
- Indication is standard.

2 **Return to normal screen.**
Press TAPE POSITION.



Remote Warning ON/OFF Feature

If Multi-brand feature is used (page 20),and this feature is set to on, a warning appears whenever an invalid key is pressed in TV, DSS, or Cable mode.

a **Display menu.**
Press ACTION.

b **Display SET UP VCR.**
1) Press ▲▼ to select.
2) Press ▶ to display.

```
--------- MENU ---------
  SET UP VCR
  SET UP FEATURE
  SET CLOCK
  SET UP CHANNEL
  IDIOMA/LANGUE: ENGLISH
SELECT:▲▼ KEY
SET    :▶ KEY
```

c **Set ON or OFF.**
1) Press ▲▼ to select.
2) Press ▶ to set.

```
------ SET UP VCR ------
REPEAT PLAY      : OFF
TIME STAMP       : ON
REMOTE WARNING   : ON
AUTO SHUT-OFF    : ON
SELECT:▲▼ KEY
SET    :▶ KEY
END    :ACTION KEY
```

- "OFF" --> Remote Warning will not appear even if invalid key is pressed.

d **Return to normal screen.**
Press ACTION twice.

VCR Lock Feature

All operations are prohibited except timer recording and tape eject. Useful for families with small children.

```
VCR LOCK ACTIVATED
```

To turn ON:
In Stop mode, hold down REC on the VCR without a cassette inserted for 7 seconds.

```
VCR LOCK OFF
```

To turn OFF:
Repeat above.

- VCR Lock is canceled automatically after 24 hours if clock is set.

Weak Signal Display ON/OFF Feature

When "ON" is selected, picture is displayed even when broadcast signal is weak or nonexistent.

1 **Display menu.**
Press ACTION.

2 **Display SET UP CHANNEL.**
1) Press ▲▼ to select.
2) Press ▶ to display.

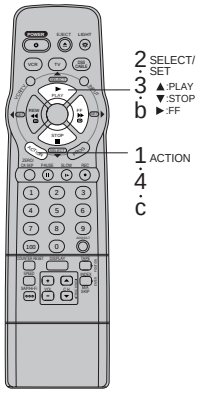
```
--------- MENU ---------
  SET UP VCR
  SET UP FEATURE
  SET CLOCK
  SET UP CHANNEL
  IDIOMA/LANGUE: ENGLISH
SELECT:▲▼ KEY
SET    :▶ KEY
```

3 **Set ON or OFF.**
1) Press ▲▼ to select.
2) Press ▶ to set.

```
---- SET UP CHANNEL ----
ANTENNA : CABLE
AUTO SET
CHANNEL CAPTION
WEAK SIGNAL DISPLAY : OFF
CABLE/DSS BOX SET UP
VCR Plus+ CH SET UP
SELECT:▲▼ KEY
SET    :▶ KEY
```

- ON --> Picture is displayed regardless of signal condition, and may not always be clearly visible.
  OFF --> Screen turns solid blue when signal is absent or weak.
- If VCR is connected to equipment which has blue back feature, selecting ON will have no effect on the other equipment.

4 **Return to normal screen.**
Press ACTION twice.



Auto Shut-Off Feature

When "ON" is selected, VCR shuts itself off when playback of a blank portion of tape continues or no signal (except when LINE is selected) is detected for over 5 minutes.

a **Repeat step "a" and "b" on page 36 to display SET UP VCR.**

b **Set ON or OFF.**
1) Press ▲▼ to select.
2) Press ▶ to set.

```
------ SET UP VCR ------
REPEAT PLAY      : OFF
TIME STAMP       : ON
REMOTE WARNING   : ON
AUTO SHUT-OFF    : ON
SELECT:▲▼ KEY
SET    :▶ KEY
END    :ACTION KEY
```

c **Return to normal screen.**
Press ACTION twice.

4 SERVICE NOTES (PLEASE READ)

4.1. SERVICE NOTES

4.1.1. SIMPLIFIED FAULT FINDING DATA

Simplified Self-Diagnostic System facilitates finding the cause of the fault. A 4 digit fault code will be displayed in F.I.P.

The Simplified Fault finding data is memorized for approximately 12 hours. This data is cleared after it is displayed and then, the POWER button is pressed back on.

1. With power turned off, press TV/VCR button on VCR (for over 3 seconds if VCR is not in shut off condition).

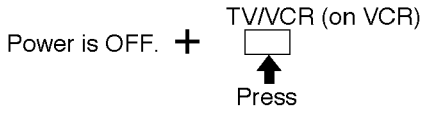


Fig. 1-1

2. Fault code (4 digit number) will be displayed in F.I.P. as shown.

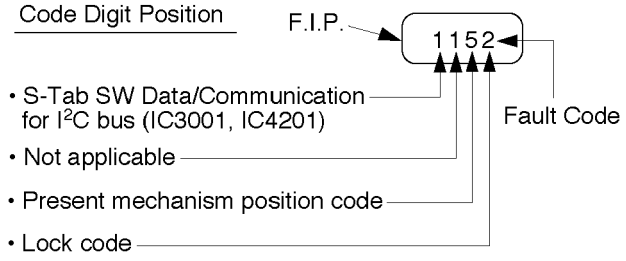


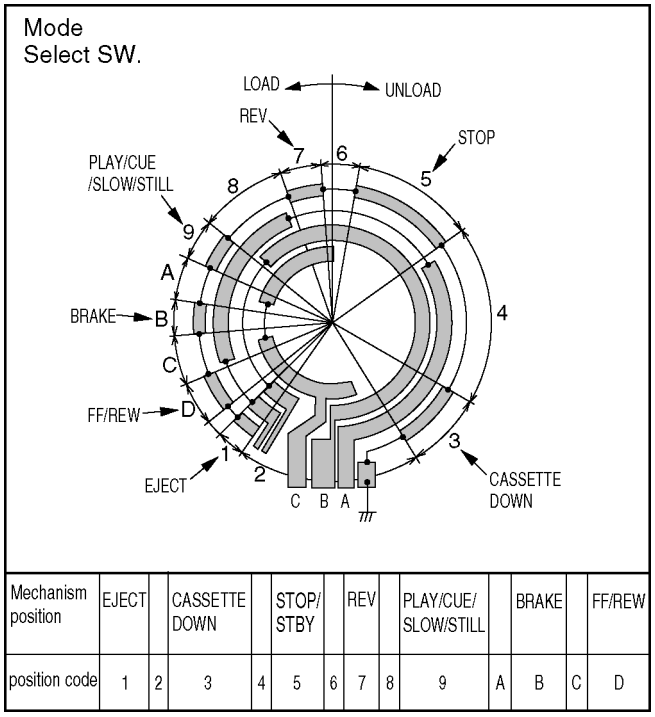
Fig. 1-2

Explanation of Codes	Code No.			
S-Tab SW. Data/Communication check for I²C bus (IC3001, IC 4201) (Refer to Fig. 1-4.)	1 ≀ 8			
Not applicable		–		
Present Mechanism Position Code Mechanism Position is indicated. (Refer to Fig. 1-5.)			1 2 3 4 5 6 7 8 9 A B C D	
Lock Code (See Note 1.) • VCR is not in shut-off condition. • Reel lock. • Cylinder lock. • Exceeds loading/unloading time. (Mechanism Lock) • Exceeds Cassette loading/unloading time. (Cassette Lock) Tape Unloading (direction) Tape Loading (direction)			1 2	0 1 2 3 4 4

Fig. 1-3

S-Tab SW. condition	Communication check for I²C bus (IC6001 ↔ IC3001)	Communication check for I²C bus (IC6001 ↔ IC4201)	Code No.
ON	OK	OK	1
	OK	NG	2
	NG	OK	3
	NG	NG	4
OFF	OK	OK	5
	OK	NG	6
	NG	OK	7
	NG	NG	8

Fig. 1-4



Mechanism position	EJECT		CASSETTE DOWN		STOP/ STBY		REV		PLAY/CUE/ SLOW/STILL		BRAKE		FF/REW
position code	1	2	3	4	5	6	7	8	9	A	B	C	D

Fig. 1-5

3. While pressing down TV/VCR button on VCR with power turned off, press any operation button on either VCR, or remote to detect that a key has been pressed.

   The 1st digit changes to "0" only when key is detected.

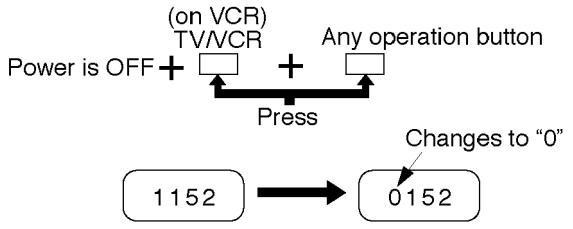


Fig. 1-6

Note:

1. When 1 to 4 listed in Lock code occurs, the VCR goes into VCR shut-off condition. VCR stops and all VCR function buttons except for power become non-operational.

4.1.2. SERVICE POSITION

The Basic Service Position does not require the use of Extension Cables. However, for more extensive servicing, Extension Cables should be used.

4.1.2.1. Basic Service Position

Service Position	Purpose
Service Position (1)	Mechanism check Mechanical adjustment Electrical adjustment
Service Position (2)	Main C.B.A. check

4.1.2.1.1. Service Position (1)

1. Remove Top Cover and Front Panel Ass'y.

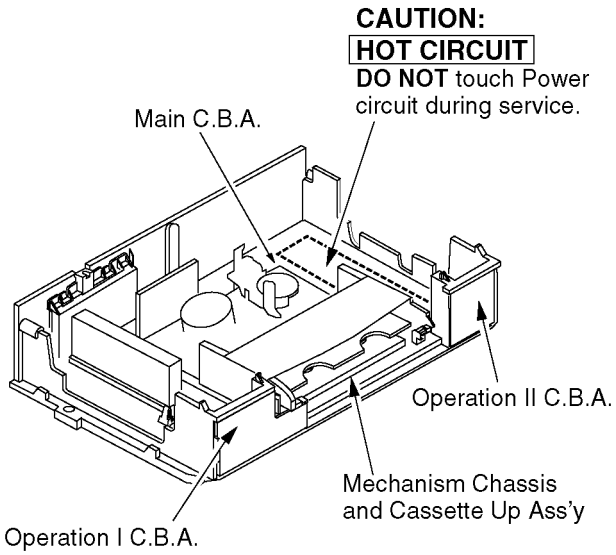


Fig. 2-1

4.1.2.1.2. Service Position (2)

1. Remove Top Cover, Front Panel Ass'y, and Operation I/II C.B.A.s. Then, remove VCR Chassis Unit out of Frame.
2. Place VCR Chassis Unit and Operation I/II C.B.A.s as shown.

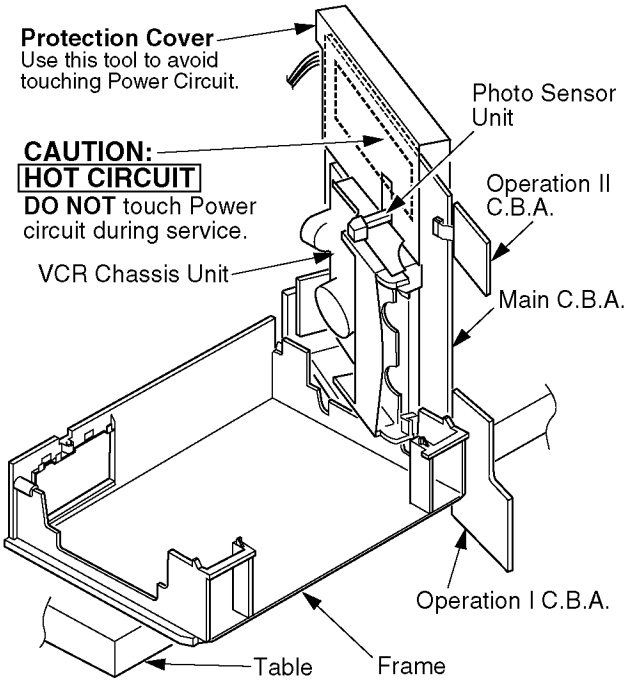


Fig. 2-2

CAUTION:

HOT CIRCUIT(Primary circuit) exists on the Main C.B.A.

Use extreme care to prevent accidental shock when servicing.

Note:

When disassembling/assembling, refer to "CABINET SECTION" in Disassembly/Assembly Procedures.

To avoid touching Power Circuit,
following Tool (**Protection Cover**) is recommended.

How to make the Protection Cover:

1. Cut a Cassette Tape Case as shown.

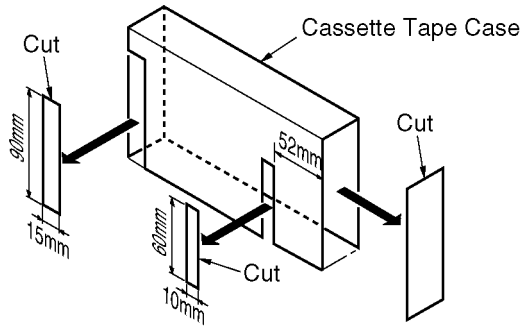


Fig. 2-3

2. Cover the Power Circuit portion on Main C.B.A. with it.

Note:
The Protection Cover is not supplied.

4.1.2.2. Service Position with Extension Cable Kit

4.1.2.2.1. Service Position

In Service Position (1), mechanism check from the Bottom Side of Mechanism Chassis and Capstan Stator Unit (Capstan Motor Drive, Loading Motor Drive Circuit) check with power on condition can be performed.

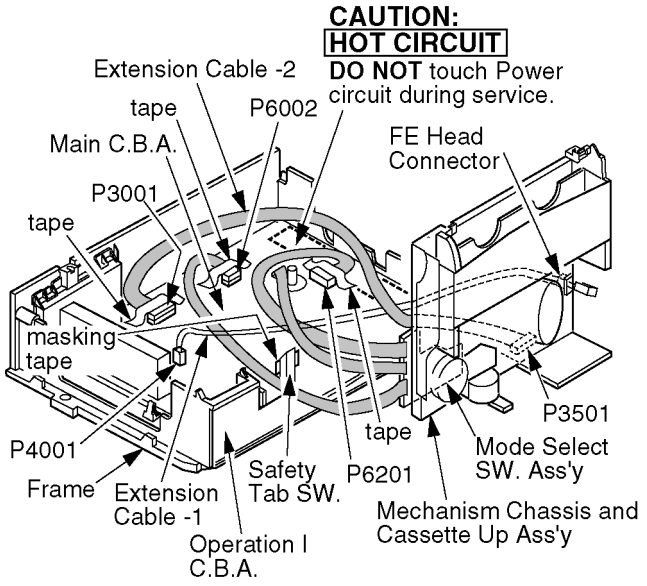


Fig. 2-4

4.1.2.2.2. Extension Cable Kit (VUZS0002)

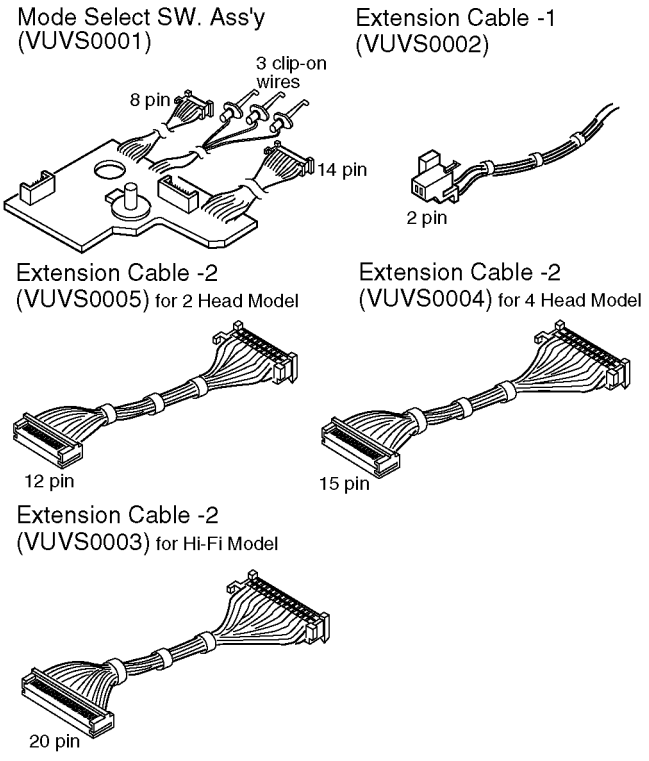


Fig. 2-5

Note:

3 types of Extension Cable -2 are included in this kit. Since there is a difference in the number of P3501 Head Amp C.B.A. pins between 2 Head, 4 Head, and Hi-Fi models, be sure to use the proper cable.

4.1.2.2.3. How to place the unit in the Service Position (1)

1. Remove Top Cover, Front Panel Ass'y, Mechanism Chassis, and Cassette Up Ass'y.
2. Connect the Extension Cables as follows:

- Extension Cable -1: Full Erase Head Connector on the Mechanism Chassis Unit ~ P4001 on the Main C.B.A.
  Note: No change in performance if pins are reversed.
- Extension Cable -2: P3501 on the Head Amp C.B.A. ~ P3001 on the Main C.B.A.
- Mode Select SW. Ass'y: a) 3 Clip-on Wires ~ Test Points on the Main C.B.A.

Red Wire	~ TP6017
Orange Wire	~ TP6018
Yellow Wire	~ TP6019

b) 8 Pin Connector ~ P6002 on the Main C.B.A.

c) 14 Pin Connector ~ P6201 on the Main C.B.A.

d) Set Mode Select SW. on the Mode Select SW. Ass'y to EJECT position and install onto Mechanism Chassis

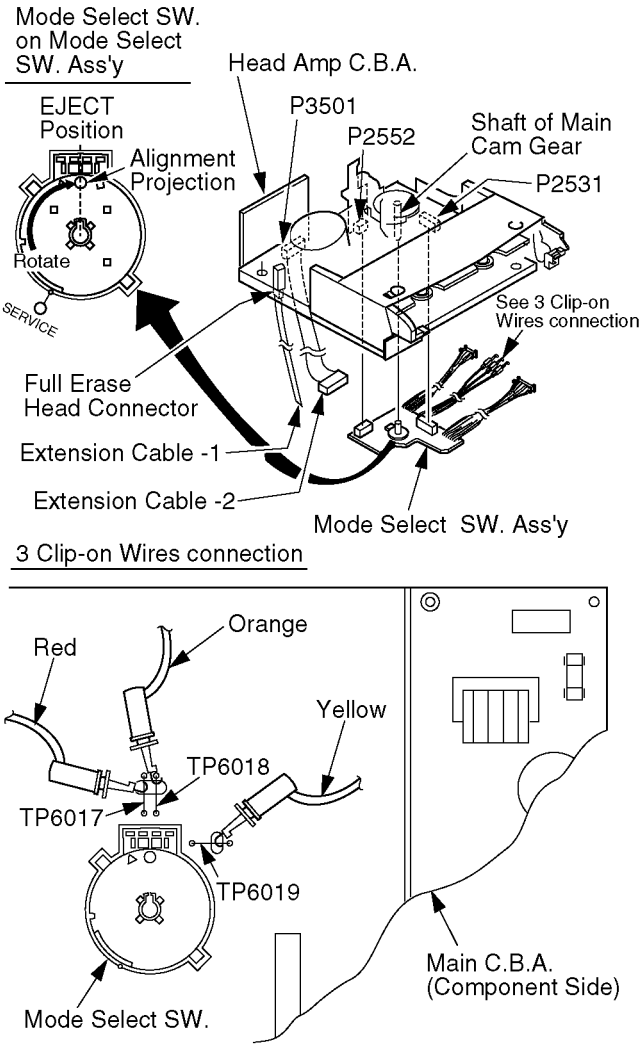


Fig. 2-6

3. Place Mechanism Chassis and Cassette Up Ass'y as shown.
4. Secure the Extension Cables with tape as shown. When recording, cover the Safety Tab SW. with masking tape to turn this SW. on.

   Note:

   To avoid damaging the connectors on Main C.B.A., it is necessary to secure connectors with tape as shown.
5. Set Mode Select SW. on the Main C.B.A. to Service Position.
6. Plug the AC plug into an AC outlet.
7. Insert a cassette.

   The power comes on, the tape is fully loaded, and the unit goes into the STOP Mode.
8. Place a jumper between TP6001 and GND to place the unit in Service Mode.
9. Check and/or repair the unit.
10. Press the STOP/EJECT button to eject the cassette.

    Note:

    When inserting a cassette again, remove the jumper between TP6001 and GND and insert the cassette. Then, reconnect the jumper.
11. After servicing, remove the jumper between TP6001 and GND to release the unit from Service Mode.

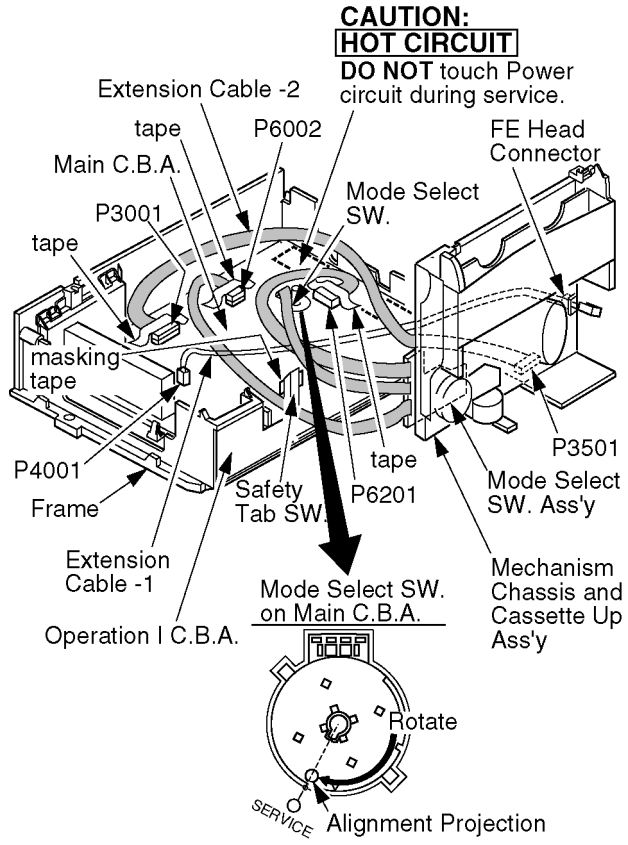


Fig. 2-7

CAUTION:

HOT CIRCUIT(Primary circuit) exists on the Main C.B.A. Use extreme care to prevent accidental shock when servicing.

Note:

When disassembling/assembling, "CABINET SECTION" in Disassembly/Assembly Procedures.

4.1.3. HOT CIRCUIT

Primary circuit exists on the Main C.B.A.

This circuit is identified as " **HOT**" on the C.B.A. and in the Service Manual. Use extreme care to prevent accidental shock when servicing.

4.1.4. SERVICE MODE

In order to inhibit detection of the Supply & Takeup Photo Transistors, Reel Sensor, and Cylinder Lock, press VCR/TV button and CH down button together on VCR for over 5 seconds in power off condition.

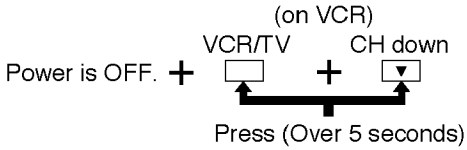


Fig. 3

The power comes on and the unit goes into service mode.

In this mode, Mechanism movement can be confirmed. When removing Cassette Up Ass'y, it can be confirmed without a cassette.

To release from this mode, press POWER button off or disconnect AC Plug.

(Alternative method)

Ground the TP6001.

4.1.5. INSTALLATION OF FRONT PANEL ASS'Y CAUTION

CAUTION:

Opener Lever may be damaged when Front Panel Ass'y is installed, with Cassette Door-Lid of Front Panel Ass'y and Opener Lever of Cassette Up Ass'y set incorrectly.

Install the Front Panel Ass'y as follows:

1. Swing the Cassette Door -Lid all the way open until the Cassette Door tab clears the Opener Lever.
2. Make sure that all locking tabs are aligned properly. Then, press the Front Panel straight in.

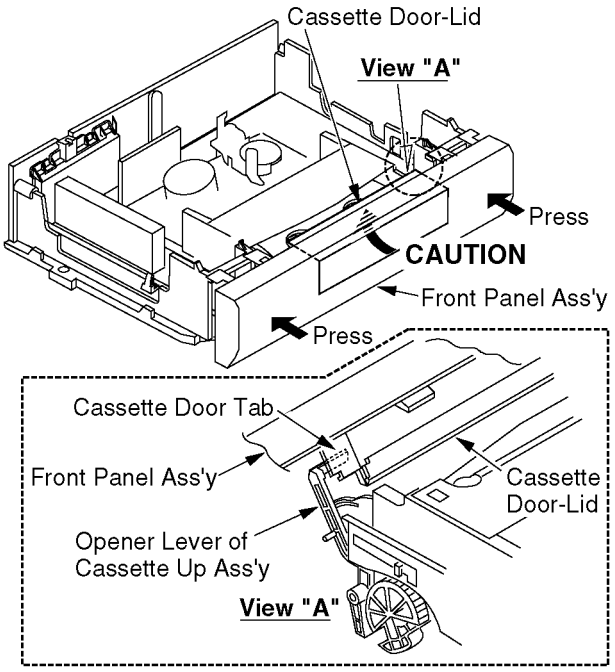


Fig. 4

4.1.6. METHOD FOR LOADING/UNLOADING OF MECHANISM

(Manual Method)

Turn the Main Cam Gear counterclockwise (for loading) or clockwise (for unloading) using needlenose pliers etc.

Note:

Do not use this method if Mechanism is jammed or locked.

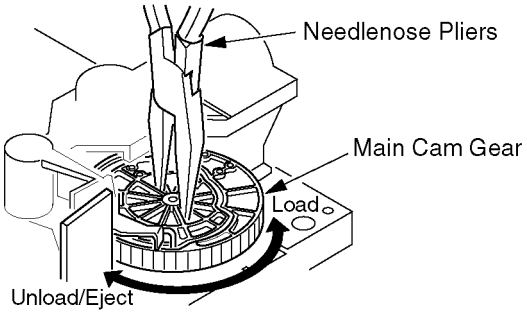


Fig. 5-1

(Electrical Method)

Remove the solder as shown and apply +10.0 VDC Power Supply (DC + to Portion "a," DC - to Portion "c").

Note:

Be careful not to let the DC Power Supply Unit GND contact the chassis GND. This may damage the Loading Motor Drive IC (IC 2501).

Be sure to apply DC + to Portion "a" of Motor P.C.B.

If DC + is applied to Portion "b", the Loading Motor Drive IC (IC2501) may be damaged.

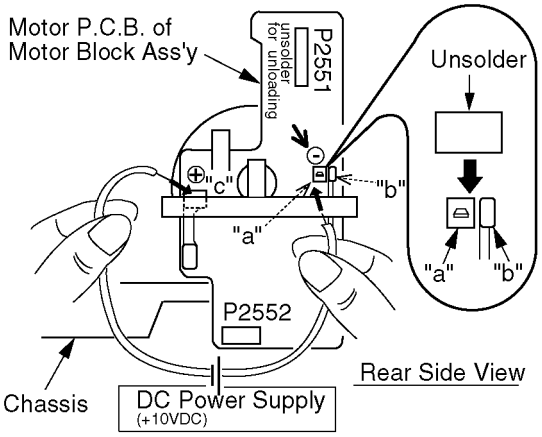


Fig. 5-2

Note:

Do not forget to solder Portions "a" and "b" after loading/unloading operation is completed.

When loading without a cassette, press Portion "a" on both sides of the Holder Unit of Cassette Up Ass'y so that the Levers clear the Tabs and Holes.

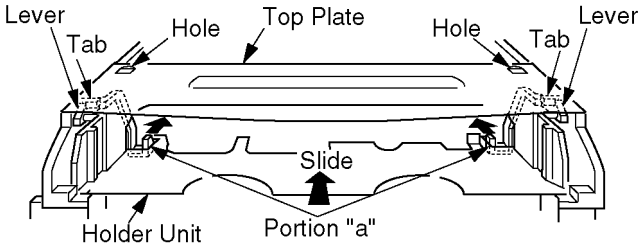


Fig. 5-3

4.1.7. HOW TO REMOVE A JAMMED TAPE

CAUTION:

Wiper Arm Unit may be damaged or its spring may be out of place when the jammed tape is removed by force.

Remove a jammed tape as follows:

4.1.7.1. Manual Method

When a tape jam is encountered, check the tape loading condition and use the following procedure to remove a tape jam.

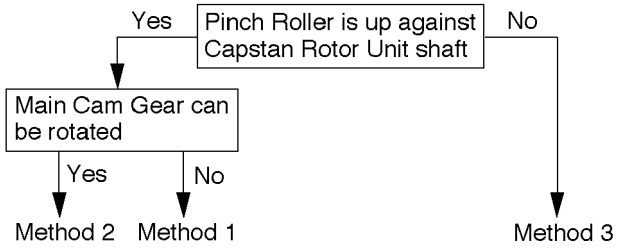


Fig. 6-1

4.1.7.1.1. Method -1:

1. While releasing 2 Locking Tabs (A) of Opener Piece, pull the Opener Piece up as far as you can.
2. Move the pin of Pinch Arm Unit out of the groove of the Main Cam Gear so that the Pinch Roller is separated from the shaft of the Capstan Rotor Unit.

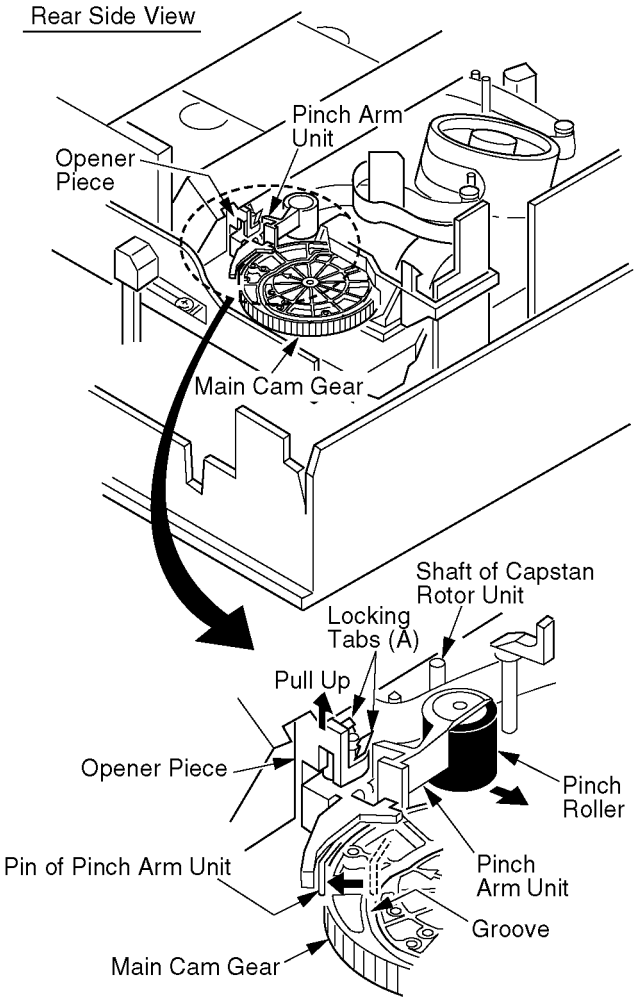


Fig. 6-2

3. Remove the tape from the tape path.
4. Rewind the tape into the cassette by rotating the Center Clutch Unit counterclockwise.
5. Unhook Spring (A) of the Drive Rack Unit.
6. Remove Screw (A).
7. Lift the Drive Rack Unit up so that the slot clears the guide tab. While pulling the Drive Rack Unit out far enough so that it clears the Drive Rack Arm, slide the Drive Rack Unit as indicated by the arrow to remove the cassette tape from the Cassette Up Ass'y.
8. Check the cause of mechanical trouble and repair.

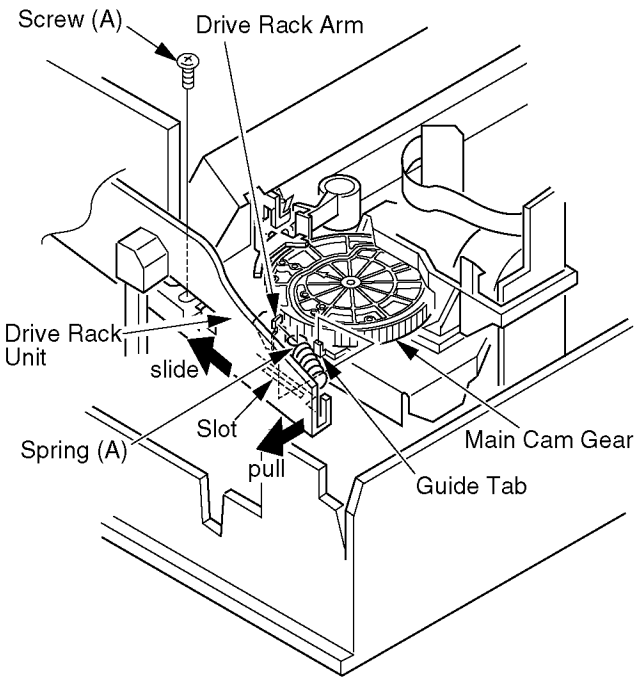


Fig. 6-3

4.1.7.1.2. Method -2:

1. Rotate Main Cam Gear clockwise with needlenose pliers, etc. so that the Pinch Roller is separated from the shaft of the Capstan Rotor Unit.
2. Perform Step 3 through Step 8 of Method -1.

4.1.7.1.3. Method -3:

1. Perform Step 3 through Step 8 of Method -1.

Note:

After repairing mechanical trouble, make sure that all gear alignments are correct, especially the Wiper Arm Unit and Drive Rack Unit of Cassette Up Ass'y. (Refer to "EJECT Position Confirmation" in Disassembly/Assembly Procedures of Mechanism.)

4.1.7.2. Electrical Method

Electrical method can only be performed when the mechanism is moved by rotating the Main Cam Gear.

CAUTION:

If loading does not start in approx. 2 seconds after DC Power Supply is applied, DO NOT continue to apply DC Power Supply. Instead, perform "Manual Method."

1. Remove the solder as shown and apply +10.0 VDC Power Supply (DC + to Portion "a," DC - to Portion "c").
2. When the Loading Posts reach the fully unloaded position, remove the Power Supply.

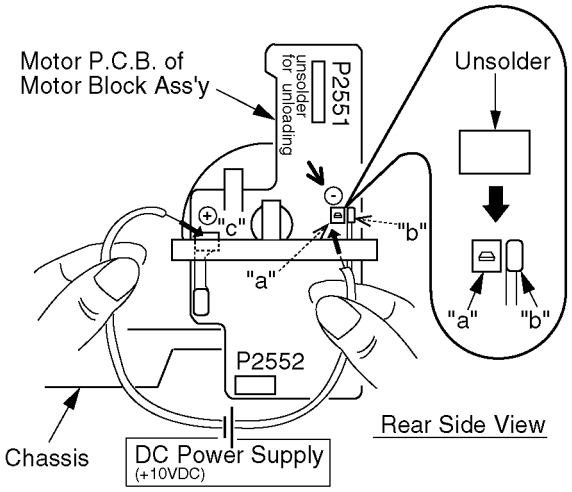


Fig. 7

Note:

Be careful not to let the DC Power Supply Unit GND contact the chassis GND. This may damage the Loading Motor Drive IC (IC 2501).

Be sure to apply DC + to Portion "a" of Motor P.C.B.

If DC + is applied to Portion "b", the Loading Motor Drive IC (IC2501) may be damaged.

3. Rewind the tape into the cassette by turning the Center Clutch Unit counterclockwise.
4. Eject the cassette by applying +10.0VDC Power Supply again.
5. After completing the removal procedure, solder Portion "a" and Portion "b."

4.1.8. DEFEATING THE AUTO TRACKING

To defeat the Auto Tracking Function, place the instrument in the STOP mode and place a jumper between TP6003 and TP6009 on the Main C.B.A. The tracking will be placed in the neutral position.

4.1.9. HOW TO SET TRACKING TO THE NEUTRAL POSITION

Ejecting the cassette tape and then reinserting it will reset the tracking to the Neutral position.

4.1.10. CYLINDER ROTATION IN STOP MODE

The cylinder will continue to rotate for approximately 5 minutes after the STOP button is pressed in Play mode etc. Eject the tape in order to stop the cylinder.

4.1.11. BLACK SCREWS ON THE CHASSIS

Black Screws are used on the Mechanism Chassis to identify screws that require adjustment.

4.1.12. HOW TO RESET ALL VCR MEMORY FUNCTIONS

To reset (clear) the select language, channel auto set and set clock functions to their initial power on condition (power on, no cassette inserted), hold down the PLAY and CH UP buttons on the unit together for more than 5 seconds. Power will shut off.

4.1.13. VARIABLE VOLTAGE ISOLATION TRANSFORMER

An Isolation Transformer should always be used during the servicing of VCR whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect VCR from being damaged by accidental shorting that may occur during servicing.

Also, when troubleshooting the above type of Power Supply Circuit, a variable isolation transformer is required in order to increase the input voltage slowly.

4.1.14. SPECIAL NOTE

All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques.

4.1.15. REPLACEMENT PROCEDURE FOR LEADLESS (CHIP) COMPONENTS

The following procedures are recommended for the replacement of the leadless components used in this unit.

1. Preparation for replacement
   a. Soldering Iron

      Use a pencil-type soldering iron that uses less than 30 watts.

   b. Solder

      Eutectic Solder (Tin 63%, Lead 37%) is recommended.

   c. Soldering time

      Do not apply heat for more than 4 seconds.

   d. Preheating

      Leadless capacitor must be preheated before installation. -(266°F ~ 302°F)

      (130°C ~150°C) for about two minutes.

   Note:

   a. Leadless components must not be reused after removal.

   b. Excessive mechanical stress and rubbing of the component electrode must be avoided.

2. Removing the leadless component

   Grasp the leadless component body with tweezers and alternately apply heat to both electrodes. When the solder on both electrodes is melted, remove the leadless component with a twisting motion.

   Note:

   a. Do not attempt to lift the component off the board until the component is completely disconnected from the board by a twisting action.

   b. Be careful not to break the copper foil on the printed circuit board.

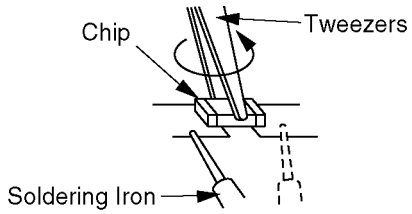


Fig. 8-1

3. Installing the leadless component

   a. Presolder the contact points on the circuit board.

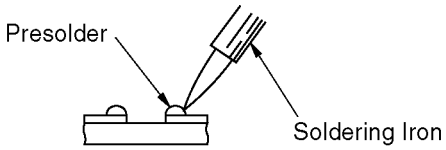


Fig. 8-2

   b. Press the part downward with tweezers and solder both electrodes as shown below.

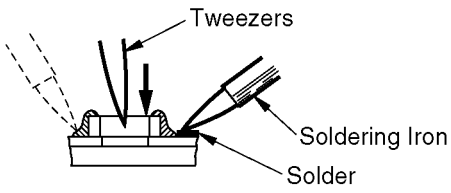


Fig. 8-3

Note:

Do not glue the replacement leadless component to the circuit board.

4.1.16. MODEL NO. IDENTIFICATION MARK

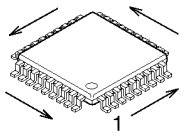
Use Marks shown in the chart below to distinguish the different models included in this Service Manual.

MODEL	MARK
PV-9661	A
PV-9662	B
Not Used	Z

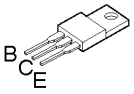
Note:
Refer to Item 3 of Schematic Diagram Notes of Schematic Diagram and Circuit Board Layout Notes, for mark "Z."

4.2. IC, TRANSISTOR AND CHIP PART INFORMATION

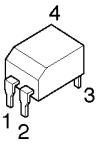
MAIN C.B.A.



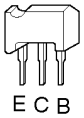
AN3479FBP,
MN101D02FPF,
AN3662FBP,
MN101D02GPH,
MN101D02HPK,
T47C216FF917



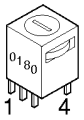
2SC5130LF608,
2SC4533LP.KT, 2SD2375,
2SD2396, 2SC3852



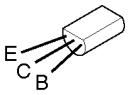
ON3131-S.KT,
ON3131-R.KT,
PS2501-1-X



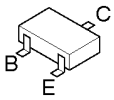
2SD2259,
2SD1458



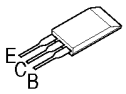
T4101,
EIQ7QF018Q



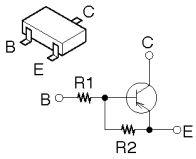
2SD2159



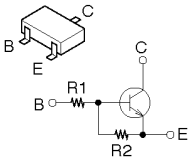
2SD601, 2SB709A, 2SD1819A, 2SC4081T106R,
2SC2412K1, 2SA1037K146R, 2SB1218ARS,
2SA1576A106R, 2SD2097TV2R, 2SD235800A



2SD1581

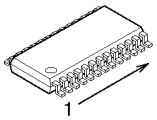


UN211L (R1=4.7K, R2=4.7K),
UN511L (R1=4.7K, R2=4.7K),
UN2115 (R1=10K, R2=OPEN),
UN5115 (R1=10K, R2=OPEN),
DTA114TK (R1=10K, R2=OPEN),
DTA114TU (R1=10K, R2=OPEN),
DTA143EK (R1=4.7K, R2=4.7K),
DTA143EU (R1=4.7K, R2=4.7K)



UN2215 (R1=10K, R2=OPEN),
UN5215 (R1=10K, R2=OPEN),
DTC114TK (R1=10K, R2=OPEN),
DTC114TU (R1=10K, R2=OPEN)

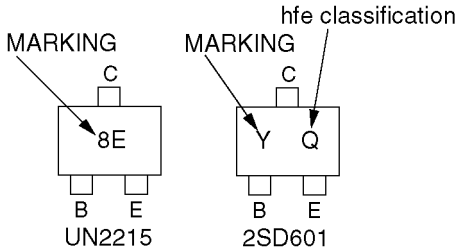
GENERAL C.B.A./ASS'Y PARTS



MN3885S, AN3361SB,
AN3328S, AN3845SC,
AN3809K,AN3371SB,
AN3362FBP, MN12511,
UPD4053BG, AN3275SB

4.2.1. HOW TO READ THE IDENTIFICATION MARK OF CHIP COMPONENTS.

MARKING	PART NO.	MARKING	PART NO.
B	2SB709A	13	DTA143EK
B	2SC4081T106R	94	DTA114TK
B	2SB1218ARS	6E	UN2115
F	2SA1037K146R	6E	UN5115
F	2SA1576A106R	6Q	UN211L
Y	2SD601	6Q	UN511L
Z	2SD1819A	8E	UN2215
04	DTC114TK	8E	UN5215



4.2.2. HOW TO READ THE VALUES OF THE CYLINDRICAL TYPE CHIP COMPONENTS.

The widest color band must be read first for value.

1. RESISTOR

   There are two types (ERD10LLJ... and ERD10TLJ...) of chip parts.

   a. ERD10LLJ : Refer to above type.

   b. ERD10TLJ : The narrow color band must be read first for value.

   If this part is included in the parts list, be sure that the color band is read properly when servicing.

2. CAPACITOR

   Because of the width of the color bands, the reading direction cannot be specified. However, the color band can be read on either side. Be sure to confirm the value using the schematic diagram.

CAUTION :

Once chip parts are removed, they must not be reused.

Always use a new part when installing a chip part.